THE DOCK & HARBOUR AUTHORITY

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Editorial.

The Port of Sourabaya.

The island of Java, in the Dutch East Indian Archipelago, has as its chief port Sourabaya, and this has been taken as the subject for this month's supplement.

In early days there were several natural harbours on the island of Java formed by the river mouths and creeks, but which could only accommodate vessels of very light draft. In more modern times these natural inlets have been developed and improved, so that to-day we have Sourabaya as an up-to-date harbour.

Since these improvements have been effected there has been a noticeable increase in the amount of traffic handled inward and outward. The increase in incoming cargo since 1923, amounting to over 50 per cent., the figures for 1923 being 942,889 tons, and for 1928 1,452,418 tons, and on outgoing cargo nearly 100 per cent., the figures for 1923 being 1,030,789 tons, and 1928 1,910,560 tons.

The illustrated article, together with plan, appears on another page.

Overtime on Dock Estates.

Whether it is possible to abolish overtime to enable the more widespread distribution of employment has been brought into the range of discussion by the request of the Ministry of Labour for information as to employment conditions at the docks. As the working of overtime is so closely related to the economics of shipping it is difficult to see how such a desirable reform, with such a laudable object in view, can be brought into the realm of practical politics. One Liverpool stevedore puts the situation thus:—It does not really rest with the stevedores whether overtime is worked. If a shipowner gives orders to get a ship out in a short time, then overtime must be worked. It is physically impossible to have more than a certain number of men at work on a ship at the same time, and overtime, prolonging the ordinary working day, is the only way out of the difficulty. It is doubtful if the men themselves would be willing to give up overtime when, as sometimes happens, a man receives 16 hours' pay for 8 hours' work, and if he works 3 nights on overtime he gets roughly the equivalent of 6 days' pay. Many jobs at the docks are specialised ones, which can only be carried out by one set of men. The limitation of overtime might appear to be very desirable in the present state of the labour market, but the problem is how to make it practicable.

Proposed New Dock for Isle of Man.

Attention is being focussed in the Isle of Man on a proposal to build a dock at Peel for the harbourage of the Isle of Man Steam Packet Company's boats during the winter months. This is estimated to cost £40,000. A deputation of Peel Commissioners have had an interview with the Isle of Man Harbour Board on the question. Reporting the result to the Peel Commissioners, Mr. Jenkinson said the Harbour Board promised whole-hearted support in the matter, and the I.O.M. Steam Packet Company had expressed their willingness to berth their boats, or some of their boats, at Peel, if they would enjoy the same terms as they got at Barrow. That, he said, was sufficient justification for the Government to step in and look on the question as an unemployment scheme of insular importance. The Receiver-General was quite favourable towards the scheme and had stated he was of the opinion that the proposed work did not present any engineering difficulty. He fully realised that the Peel Harbour was the most suitable in the island for a dock. The Peel Commissioners decided to ask the deputation to get in touch with His Excellency the Lieutenant-Governor, with a view to the necessary money being raised to finance the work. Meanwhile it is expected the scheme will be discussed by His Excellency, the directors of the Isle of Man Steam Packet Company, and the I.O.M. Harbour Commissioners.

Reduction in Certain Charges at Port of London.

At their meeting on July 17th the Port of London Authority decided to lower certain of their charges.

These consist mainly of reductions in the Dock Tonnage Dues on Vessels and in the Port Rates on Goods. The extent of the reduction is estimated in round figures at £120,000 per annum.

This will represent a considerable relief to the traffic of the Port of London and will doubtless be appreciated at a time when the trade of the country is not in the most flourishing condition.

It will be of interest to note that since the 1st January, 1925, the reductions made by the Authority on various occasions during that short period of five and a-half years amount in the aggregate to an annual sum of £942,000, which figure includes the reductions now decided upon. Of that amount of £942,000, £150,000 was passed on in reduction of charges last year consequent upon the relief obtained by the Authority under the Government De-rating Scheme.

The large amount of reductions made in charges, apart from the de-rating benefit, has been found possible by the Authority owing to increased tonnage in certain directions and on account of more economical and efficient working arrangements.

Bremen's Sea Traffic in June and First Half of 1930.

In June, 1930, 788,471 net registered tons arrived in Bremen seagoing vessel traffic, against 833,429 net registered tons in May and 719,821 net registered tons in June of the previous year. In the first half-year, 1930, a total of 4,489,605 net registered tons, against 4,373,694 in the same period of the previous year, arrived. Thus traffic increased by 115,911 net registered tons, or 2.7 per cent.

The sea-borne goods traffic of the five most important Weser ports, on the other hand, decreased in June. The total was 488,500 tons, against 500,500 tons in May and 545,600 tons in June, 1929. Imports with 323,500 tons increased in comparison with the previous month by 22,100 tons, but were 29,000 tons less than June of the previous year. Exports with 165,000 tons were in comparison with the same periods, 34,100 and 18,500 tons less respectively. During the first half-year a total of 3,220,900 tons was imported and exported, against 3,247,100 tons in the same period of 1929. Thus traffic has decreased by 26,200 tons, or 0.8 per cent. However, only imports declined, falling from 2,130,000 tons to 2,085,400 tons, or by 2 per cent. This decrease was chiefly caused by the throttling of the importation of wheat. Arrivals of foreign coals were also considerably less, but this was counterbalanced by an increase in importation of mineral oil. Export rose from 1,116,600 tons to 1,135,500 tons, or 1.7 per cent.

Reduction in Cotton Charges at New Orleans.

Important reductions in certain cotton charges at the Public Cotton Warehouse have been announced by the Board of Commissioners of the Port of New Orleans, and these reductions place the port on a competitive basis with the Texas cotton ports.

The reduction was made in the charge of furnishing and applying three and four pound patches to bales when compressed, and will amount to quite a saving to handlers of cotton in the general handling charges, through the year.

By the new tariff the charge for furnishing and applying the patches is 5½ cents per pound, as against 6 cents on the old tariff, a saving of half a cent a pound. The patches are placed on bales that have been cut open for samples, and when applied at compressing cover the rents in the bagging and make the bale secure and compact.

The patches are of jute or other heavy material, and are skilfully applied to prevent loss of the cotton through the tears made at sampling.

Notes from the North.

Coal Hoists for Cardiff.

THE Hydraulic Engineering Co., Ltd., of Chester, have been successful in securing an order from the Great Western Railway Company for two more large movable coal hoists and traversers for Queen Alexandra Dock, Cardiff. These new hoists will be practically identical with those which the Hydraulic Engineering Company are now erecting at Cardiff and which were ordered from them by the same railway company in April last year. The hoists and traversers will each be capable of dealing with the large 30-ton wagons.

Loading Arrangements.

The Leyland Line of steamships, hitherto loaded and discharged at the Liverpool Docks by their own staffs, are to make a change in their working system. Since 1st July the stevedoring has been in the hands of Messrs. Rea, Ltd. The personnel of the Leyland staff is in no way affected by the change.

Watching of Goods on Dock Quays.

To ensure the safety of goods lying on the dock quays, the Mersey Docks and Harbour Board enforces a bye-law which provides that: " A master porter shall continue to watch goods discharged from a vessel for which he is acting as master porter until the goods shall be actually loaded from off the quay." The only exception is in respect of timber traffic. This has caused a great deal of discussion in shipping circles, particularly since a protest has been uttered by a representative of Messrs. Alfred Holt and Co., of the Blue Funnel Line, against the Mersey Docks and Harbour Board " in their irritating attitude of indulging in unnecessary trivial pin-pricks." The gist of their complaint is that watching charges are burdensome to shippers and importers. In the six months October, 1929, to April, 1930, Messrs. Holt imported into Liverpool roughly 93,500 bales of hemp, more than 50 per cent. of the total hemp imported to Liverpool for that period. The receivers of these cargoes, in addition to all their other overhead charges, had to pay an additional amount to master porters to cover the cost of watching. The hemp is ordinarily under the supervision of the shipowners in any appropriated berth, and the risk of losing bales of hemp to pilferers is obviously so slight as to be ridiculous. One simply cannot carry away bales of hemp, and the last occasion on which a bale was stolen was lost in the mists of antiquity. It is now touch and go, not only in Holt's case, but in others, whether this trade shall remain in Liverpool or go to Continental ports. Statistics show that for the past two years Liverpool actually has lost a fair percentage of her trade to the Continent. " Whereas everyone to-day is hard at work trying to cut this and that charge down in the interests of national economy, the Mersey Dock Board have evidently adopted a policy of adding these little irritating charges," concludes the indictment.

Watching charges are a matter of concern to all who have the handling, inward or outward, of produce, but the Mersey Docks and Harbour Board has an over-riding responsibility in protecting goods not only against theft but against fire and other risks. Master porters point out that produce on the quays is ordinarily under the supervision of the shipowners in any appropriated berth. But the master porter, under Bye-law No. 11, has the custody and control of all goods until delivered from the dock quay. If master porters can be relieved of this statutory responsibility, they will be glad to do away with watching charges. Several conferences have been held on the matter, and two or three years ago a proposal was placed before the Liverpool United Trades Association, which would not agree to the master porter being relieved of his responsibility. Losses and pilferages from the Liverpool Docks are remarkably small, but this immunity is the direct result of watching.

The bombshell has caused widespread reverberations and led to a London firm of importers and exporters to point out that in London the charge for inward dues on hemp is 1s. per ton and outward dues 6d. per ton. In the case of hemp arriving in London for immediate export neither charge is incurred. In Liverpool, where the goods have to be transhipped immediately, port dues and quay porterage have to be paid. When they have hemp for South America, Scandinavia and similar ports, they avoid Liverpool and bring the goods to such a port as Antwerp, where the cost of transhipment is about 5s. per ton, and where it is possible to get a reasonable rate of freight. The cost of putting hemp into store in Liverpool (and also in London) from the import steamer is also much too high.

Another view on watching charges, this time from a Liverpool firm of produce brokers, is that a company should be able to waive the watching when desirable and say it will take responsibility for loss. If one were left with 100 tons of rice bran on the quay, worth £4 a ton, in two days, with watching charges of £4, a pilferer would have to steal one ton before the importer lost anything. Each trade should be free to arrange with the Dock Board for watching if it required it. Pleading that watching charges should be dropped, another importer said he did not believe any other port has these charges. The regulation becomes iniquitous at times such as when goods arrived for two or more parties. If the others take their goods off the quay and one lot was left, the owners had to pay the full watching charge—10s. a day and 10s. a night. Supposing a boat comes along next day and other goods are put on the quay, they would still have to pay the same charge, although the watchman is watching other people's goods as well.

In view of all the criticisms which have been made it was only to be expected that an official pronouncement would be made by the Mersey Docks and Harbour Board. Mr. E. G. Brownbill, Chairman of the Traffic Committee, explains that there seems to be a lack of knowledge as to the system of watching in the port. A master porter for a vessel is under statutory obligation to care for the goods committed to his charge until finally they are removed from the quay. The charge for watching (which is consequent on this responsibility) for the first 72 hours after landing, is included in the master porters' rate. For any period after the 72 hours, the charge for watching is 10s. per day and 10s. per night, which is spread equally over all the consignments on the quay. The Board from time to time has endeavoured to obtain the agreement of all interests to do away with watching after the first 72 hours. This would relieve the master porter of his statutory obligation of responsibility for goods on the quay after 72 hours. Neither the Board nor the master porter desire the continuance of watching, but the master porter must be relieved of his statutory obligation to ensure the safe custody of goods before he can dispense with watchmen. The remedy lies with the consignees of goods who can remove them within 72 hours of landing or warehouse the goods, or if all consignees agree, indemnify the master porter against loss after the goods have been 72 hours on the quay. The Chairman of the Board, Mr. A. W. Bibby, said it was very easy to throw all the blame on the Dock Board, because it had a broad back. The Dock Board has nothing to do with the watching; it is not responsible for it, and it is not paid for it. The only man who is paid for it is the master porter—that is, the shipowner or his nominee. The Dock Board have tried to get away from this—they have tried to abolish watching charges altogether—but they have not been allowed; the trade generally is against it, and very properly so.

Douglas Fog Signals.

Following on the stranding of the " Mona " on Conister Rock in a dense fog, the question of the effectiveness of the fog signals at Douglas has been raised. Notice of the following question to the Lieutenant-Governor has been given in the Tynwald: " If he is aware that the foghorn which was erected on Douglas Head some years ago, and which was provided with an efficient sounding reed, was replaced by a horn which was not sufficiently heard to be of any value as a foghorn to ensure the safety of shipping to the Port of Douglas, and will His Excellency take such steps as may be necessary to ensure an efficient service in this connection? " It appears that there has been no alteration in the characteristic of the reed trumpet signal since the original installation, although the situation of the station has been altered. The Harbour Commissioners have had the question under special consideration during the past year, and last February gave to the appropriate authority notice of their intention of holding a full inquiry during the autumn, with the object of deciding if the present signal should be abolished and another substituted in a more appropriate situation, and having a different sound characteristic which would more clearly indicate the approach to Douglas Harbour in foggy and misty weather.

Fleetwood Ferry Proposal.

A meeting has been held at Fleetwood attended by councillors and representatives of the fishing industry to discuss the proposed formation of a passenger steamboat company to revive the service between Fleetwood and Barrow, which was very popular in pre-war days. A committee was appointed to ascertain the attitude of the L.M.S. Railway Company on the project. The private limited company, which it is proposed to form, would have a nominal issued capital of £6,000, made up of £1 ordinary shares. The estimated net profit per week was £171. Mr. J. Wood, Fleetwood dock superintendent, and Mr. T. Oldham, formerly station superintendent at Fleetwood, were invited to attend the first meeting of the committee.

Notes from the North—continued.

Mersey Tunnel Progress.

Working day and night, 1,525 men are at present pushing rapidly ahead with the construction of the Mersey Tunnel. More than 80 per cent. of the excavation work on the existing contracts has been completed, and over £2,000,000 has been expended of the original contract values. The tunnelling of the two entrances on the Birkenhead side is proceeding at six working faces and concreting is going on at four different points; 585 men are employed on this side of the river. Work is proceeding at three places under the river on the construction of the reinforced concrete roadway and other interior concrete work. The Mersey Tunnel constructional work is so far advanced that the Joint Committee has decided to hold an official inspection early in September. Invitation will be issued to members of the Councils of Liverpool, Birkenhead, Wallasey and Bootle, the Dock Board and the Chambers of Commerce of Liverpool and Birkhenhead. A new phase in the construction of the Mersey Tunnel involving the building of a reinforced concrete roadway has just been commenced. Although the contract itself has not been executed formally, work is in full progress. The whole of the upper half of the cast iron lining of the under river section of the tunnel is now in place and work is well ahead of requirements. The total number of men engaged on the contract is about 1,600.

Over the traffic tunnel cutting between the corner of Hamilton Square and the Market Place, in Birkenhead, originally an open cutting, apparently some fifty or sixty ft. in depth, huge steel girders have been slung across, their uppermost level being just below that of the neighbouring streets. Here an arc is being built which will form the interior of the finished tunnel, and the space between the iron sections forming the lining and the girders is being filled in with rock excavated from below. When the work is completed this portion over the tunnel will be sufficiently strong to support quite a respectable building.

Tidal Power of the Mersey.

The suggestion to harness Mersey tides for power for industrial purposes was revived at a Liverpool conference of water engineers and hydraulic experts from all parts of the country by Mr. Edwin Thompson, chairman of Liverpool Corporation Water Committee. "We still see the Mersey rising and falling and flowing swiftly by," said Mr. Thompson, "and we are waiting for some hydraulic engineer to show us how to utilise all that great waste of power. I know that engineers to-day can prove that the proposition is uneconomic, but perhaps it will not always be so."

Maryport Harbour Undertaking.

In his half-yearly report to bondholders in the Maryport Harbour undertaking Mr. Fred Kelly, the Clerk, states: "The conditions of the shipping trade at the harbour and docks are not better than they were during the immediately preceding half-year. The revenue for the financial year ended March 25th last was £6,347 and the expenditure for the same period was £6,023. The surplus on the year is not sufficient to justify any payment of interest on the mortgage debt. The trade of the port is now almost solely the shipment of coal. Since the beginning of January last the bulk of the coal shipped at Maryport in the previous year from the Risehow and the St. Helens collieries, which was 27,000 tons, has been shipped at Workington, and the Oughterside Colliery, whose shipping port was Maryport, has ceased working, a further loss of 9,000 tons trade. The total shipment for the year 1929-1930 was about 139,000 tons. To counteract the decreasing revenue, the Harbour Commissioners have made an application to the Minister of Transport for an order to further increase the statutory maximum charges on vessels and the toll or charge on goods imported and exported, and the order has been made. It is hoped that the new increased charge will be in force a few weeks from now. The colliery owners who use Maryport made an offer a few months ago of a voluntary contribution to the Harbour Commissioners and are now making a contribution of two-thirds of a penny per ton on coal shipped, more than the authorised rate of charge on coal. The surplus in hand at present is not more than is necessary to meet outstanding charges and provide a working balance. Therefore, I regret to say, there can be no payment on account of interest."

Restricted Bridge Weights.

Another prosecution arising from road vehicles of excessive weight using the bridges of the Mersey Docks and Harbour Board has taken place at Liverpool. The case was one in which the driver of a lorry and trailer was summoned for travelling on the floating bridge to the Liverpool landing stage with a load of 14 tons, the maximum weight allowed being 12 tons. The magistrates issued a warning to all haulage firms that they must see that their vehicles are the correct weight before using the bridge. Otherwise there would be serious consequences.

Mersey Dock Board Traffic Return.

One very satisfactory feature of the return issued by the Mersey Docks and Harbour Board a few days ago is the increase of close on 800,000 tons in shipping, inwards and outwards, paying rates to the Board, in the year ended 1st July, 1930. The first effects of de-rating are manifest. The total rates and dues on goods received for the year was £1,124,223, against £1,221,198. The grand total of rates on vessels and rates and dues on goods, inclusive of receipts on Conservancy account, was £2,789,950, compared with £2,855,843 for the year ended 1st July, 1929, showing a decrease of £65,892 13s. 11d. The approximate weight of goods for the year 1930, on which dues were paid, is estimated at 14,232,000 tons. The grand total of the tonnage of vessels for the year ended 1st July, 1930, was 21,314,820, against 20,521,900 for the previous year, an increase of 792,914 tons. These figures represent the total net register of vessels paying rates to the Board, inwards or outwards. To arrive at the total tonnage which entered and the total tonnage which left the Mersey, it is necessary to double the figures. Thus the approximate total tonnage, inwards and outwards, for the year just ended would be 42,629,640 tons. Concerning the rates received on vessels, the total for the year was £1,665,717, inclusive of £266,733 on Conservancy account, compared with £1,634,645, inclusive of £257,378 on Conservancy account for the year ended 1st July, 1929. The rates received on vessels, inclusive of Conservancy account, in 1930, show an increase of £31,071, and the total rates and dues on goods for the same period show a decrease of £96,964. The reduction of 5 per cent. in the foreign dock tonnage and wharf rates on vessels was discontinued from 1st September, 1928, until 1st January, 1930, when it was restored. Consequent upon the de-rating clauses in the Local Government Act, 1929, the following reductions were made:—(a) On 1st April, 1929, all goods exported coastwise were exempted from the payment of outward town dues; (b) On 1st January and 1st March, 1930, large reductions were made in the dock rates and town dues on certain articles.

Salford Crane Fire.

Fire broke out in a crane at Salford Docks a few days ago, and for a time there was a danger of a serious outbreak. Flames shot out from the crane, and it was feared that they might spread to the ships nearby. Prompt measures were taken by the staff and the crew of a vessel in the dock, a hose being run from the ship. By the time the Manchester and the Salford brigades had arrived the fire was well in hand.

Personal.

Mr. Charles A. James, formerly of Liverpool and Birkenhead, has been appointed a director of the Mercantile Dry Dock Company, Jarrow-on-Tyne. During the war Mr. James was working in the ship repairing departments of Messrs. H. and C. Grayson, Ltd., and Messrs. Cammell, Laird and Company, Liverpool. He left Liverpool in 1919, and two-and-a-half years ago went to the Mercantile Dry Dock Company, also a ship repairing firm.

New Owners of Leasowe Lighthouse.

Mersey Docks and Harbour Board has sold the Leasowe Lighthouse to the Wallasey Corporation, which has now obtained the formal sanction of the Ministry of Health for the borrowing by the Council of the sums of £360 and £540 for the purchase. The Works Committee have postponed consideration of the question as to what use the lighthouse can be put to. It is certain, however, that some scheme will be considered and adopted before next spring.

New Cantilever Bridge.

Work is still in progress on the new electrically controlled cantilever bridge over the Duke Street passage at the Birkenhead Docks. The execution of the contract is taking longer than the inexperienced laymen expected. At one time it was hoped the new bridge would be ready for use early this summer. Meanwhile, one-way traffic is still the rule and at times quite a string of vehicles is held up, as the roadway has become one of the chief connnecting links between Birkenhead and Wallasey. The bridge will contain several features new to Birkenhead Docks. It will be the first electrically controlled bridge on the system, the first rolling bascule bridge, and also the only one where automatically operated gates will close the roadway to traffic when the bridge is lifted into an upright position. It will not only save space, but will have a greater width for road traffic. Its total weight of 1,100 tons will include 750 tons of ballast.

Birkenhead Ferries Account.

The Birkenhead Ferries Committee recommend the carrying forward to the current year of a balance of £1,910 from the financial year ended 31st March, remaining after appropriation of £14,000 in relief of rates.

Notes from the North—continued.

Bridge Works at Northenden.

Work has been resumed on the new Mersey bridge at Northenden. The temporary wooden bridge which had been constructed having been swept away by a recent storm, a new skeleton bridge of wooden beams is now in place and carries the light railway and the cranes which are used for lifting earth and bricks. A deep excavation surrounded by wooden piers had been made on either side of the river, and filled with muddy water by the floods. That on the northern bank has now been pumped dry and the work of laying the foundation bricks has been resumed. This procedure is also being followed on the southern side. The railway which runs to the works near the end of Princess Road has been relaid, hardly above ground level in many places. That it ever ran on an embankment intended to keep it above the floods is only apparent from the thick layer of slimy mud which extends for yards on both sides of it. As the result of the flood wooden sleepers, beams and even rails were cast on the fields adjoining the river banks, and machinery had to be brought up from the river bed, where it fell in the collapse of the bridge. The work of widening the river by setting back the bank on the Manchester side just below the bridge is now proceeding very fast, and this should prevent all danger of the recurrence of such a break through the same place.

Mersey Coast Erosion.

A deputation composed of the riparian authorities of the River Mersey—the Lancashire County Council and the Cheshire County Council—has had an interview with Viscount St. David's Committee on Unemployment Grants to draw attention to a scheme to cost £150,000 to deal with erosion of the Mersey from Stretford to the weir of the Manchester Ship Canal, a scheme which will involve an annual upkeep of approximately £3,000. Plans which will take some time to execute are being prepared.

West African Harbourages.

It was announced at the annual meeting of Elder, Dempster and Co., Ltd., the steamship owners, that the fine new harbour at Takoradi (West Coast Africa) had now been in operation twelve months, and that by co-operation between the harbour authorities and the shipowners many difficulties inseparable from the opening up of traffic of a new port have been overcome. The chairman said the company looked forward to gradual progress in the provision of greater despatch to vessels and improved facilities for the handling of cargoes, etc. Whilst looking to the depressed state of trade in West Africa, the present was not a very appropriate time for a Government to commit itself to other than essential capital expenditure. He believed the need would later on be felt for additional wharfage accommodation at Takoradi and he trusted that the Gold Coast Government would consider the question of putting in hand the further extension of the new harbour when financial conditions permit. The harbour had already attracted one new trade to the Gold Coast, as the Shell Oil Group had established a petrol and kerosene bulking and canning plant outside Takoradi, which was a new departure for West Africa. Another interesting development at Takoradi was in connection with the shipment of manganese ore, which was rapidly and expeditiously loaded at Takoradi by the up-to-date plant recently installed by the African Manganese Company. If, as the result of recent developments in internal communications, shipping traffic became concentrated at a less number of the bigger ports, it would be to the general advantage, the smaller ports being served from the larger transhipment ports. As pioneers of cold storage facilities in the West African trade, they had continued their policy of providing still further accommodation throughout the whole fleet for the conveyance of perishable stores and refrigerated cargo. The new motor cargo vessels were all fitted with the most modern refrigerated chambers, thus increasing still further the cold storage facilities upon which the whole of the European population of West Africa depends so largely for their supplies of fresh food services. At the end of the year the total fleet of the Elder Dempster group of shipping companies consisted of 66 vessels of over 300,000 gross register tons, excluding nine vessels then under construction, aggregating over 40,000 tons gross.

The following new motor cargo vessels have been delivered, viz.: "David Livingstone," "Mary Slessor," "Henry Stanley," "William Wilberforce" and "Edward Blydon." The remaining three new vessels of this class will be delivered during the year, and the Achimota, a motor passenger vessel under construction for the express mail service, is expected to be completed early in 1931. Owing to the increased demand for facilities for the carriage of locomotives complete and ready for service, the "Mary Kingsley," now building, is being equipped with arrangements for this purpose and with gear to lift up to 75 tons. He understood that the Gold Coast Government had applied to the advisory committee of the Colonial Development Fund for a loan to carry out, at Accra, certain works designed greatly to improve the shipping facilities at present available there, and to provide better storage accommodation. He hoped the necessary funds would be forthcoming to enable these long-needed improvements to be put in hand without undue delay. The West African Lighterage and Transport Co., Ltd., which operates the company's agencies on the Gold Coast, had during the course of the year entered into contracts with the other members of the European Conference Lines, viz., the Woermann Lines and the Holland-West Africa Line, whereby the West African lighterage work at Gold Coast ports is done for those lines, as well as for the Elder Dempster group of shipping companies. "It is reported," remarked the chairman, "that a suggested improvement scheme in connection with the Government Wharf at Bathurst has been dropped, but I hope that the Government of Gambia will take advantage of the Colonial Development Fund to deal with the existing inadequate harbour facilities at that port."

Blasting Muffle.

During the blasting operations in connection with the Birkenhead entrances to the Mersey tunnel, an interesting form of muffle is used to prevent danger to workmen from falling rock, etc. The long arm of the 100-ft. crane sweeps round, carrying a massive piece of matting. This is suspended over the portion of rock to be blasted, and, while acting as a blanket to deaden the sound, also prevents pieces of rock from flying when the charge is fired.

Mersey Dock Board Warehousing Department.

Mr. Harold Percy Long, who has been chief assistant manager of the Mersey Docks and Harbour Board for the past eleven years, has been appointed chief warehouse manager to succeed the late Mr. W. B. Simkins. Mr. Long entered the Board's service in March, 1893, in the warehouse department. In September, 1897, he was transferred to the rates and dues department, where he remained until October, 1910, when he was appointed assistant to the collector of port rates of the Port of London Authority. Subsequently he had control of this department until 1st May, 1919, when he returned to Liverpool and re-entered the Dock Board's service as chief assistant warehouse manager, and during the time of the late Mr. Simkins' illness Mr. Long carried out the duties. Mr. Long is a member of the Court of Referees for the Ministry of Labour, sitting as an employers' representative, and he is also one of the representatives of the Dock Board on the Committee of the Penny-in-the-Pound Hospital Contribution Fund. Mr. John Pemberton, formerly traffic committee clerk, has been appointed assistant to Mr. Long.

Port of Manchester Publicity.

Dock and harbour authorities believe in the judicious use of publicity to attract attention to the competitive virtues, and the efficiency of the facilities, of their undertakings. The Mersey Docks and Harbour Board, Port of London Authority, and the Manchester Ship Canal Co., have always been to the fore in this respect. At local exhibitions it is always a difficult matter to know what a dock board can display in order to stimulate the interest of visitors in the resources of a transport system that might have cost hundreds of thousands of pounds, or even millions, to construct. Manchester Ship Canal Co., who had two stands at the Salford Industrial and Trades Exhibition, which was one of the side shows of the celebrations to commemorate the 700th anniversary of the granting of the first charter to constitute the town a free borough, demonstrated how well this might be done. A series of photographs of the construction of the waterway which linked the heart of industrial Lancashire with the sea in 1894, the docks at Manchester, and the more important works along the canal, including Partington, the coaling basin, Stanlow Oil Port, and Ellesmere Port proved of great interest. A relief map showed the important industrial area extending as far south as Birmingham, served by the Ship Canal. Chart photographs completed this appealing exhibit. One left the stand strongly impressed by the idea of Manchester and Salford being a port with services and facilities of the first order.

Visitors to Gladstone Dock.

Mersey Docks and Harbour Board, a few days ago entertained a large party of Bradford wool merchants on a river trip and tour of Gladstone dock system, and showed them the advantages of utilising Liverpool's excellent dock facilities. In the absence of Mr. A. W. Bibby, chairman of the board, Mr. W. S. Crichton, the chairman of the Trade Committee, acted as host. Representatives of the Blue Funnel Line, the White Star Line, Messrs. James Dowie and Co., and the Liverpool Wool Brokers' Association were present.

Notes from the North—continued.

Trafford Park Oil Traffic.

For the first time in the history of the Texas Oil Corporation, the salesmen of the Corporation met recently at the Trafford Park, Manchester, depot to inspect the ocean terminal and for a sales conference. The tankers from Tampico and Houston, Texas, halt by a strip of land in Trafford Park and run their five pipelines inland to the great land tanks where the oil is stored in waiting for various cleansing and blending processes.

Proposed River Dee Barrage.

New interest is being taken in the oft-discussed River Dee reclamation scheme. The main feature of the proposal is to construct a huge masonry barrage across the Dee Estuary from West Kirby to Talacre, a point on the North Wales Coast, with the objects of providing a deep channel up the Dee and a shorter road between Lancashire via Wirral, to North Wales. The scheme from the point of view of it providing work for the unemployed during the present state of depression in the country, was put forward at the conference recently held in London, of representatives of local authorities. The embankment would extend to the brink of the only navigable channel of the Dee, near the Flintshire Coast and a new traffic way would be continued by bridge, so as to allow of the passage of vessels. A vast area of land would thus be enclosed and reclaimed for agricultural purposes, while access would be obtained to the rich mineral deposits which are known to exist beneath the sand. Already a successful attempt has been made to enclose a small portion of the Dee sands on the Welsh side, and to turn it into arable ground. Although the cost of the scheme would run into several millions of pounds, the expenditure, it is claimed, would be highly reproductive.

One of the most important engineering problems in connection with the scheme is the effect which it will have upon the tides flowing into the adjoining Mersey Estuary. The Mersey Docks and Harbour Board are watching this side of the question closely.

Ald. C. McVey, of Birkenhead Corporation, one of the advocates of the scheme, says the development of that part of the Dee from Chester right down to West Kirby would be of such enormous benefit that it would do for this area of Cheshire what the Ship Canal did for Manchester, by opening up an area which seems at the moment to be entirely cut off. Ald. McVey, at the same time drew attention to other schemes in Birkenhead and Wirral which might be undertaken under the Government's assisted schemes, including the extension of the river wall along the Mersey from Cammell Lairds to Rock Ferry Slip.

In connection with the Dee barrage scheme there is a possibility of the Mayor of Chester convening a conference of the local authorities concerned.

Jugoslavian and Grecian Port Matters.

According to information which has been published, work on the construction of the new harbour of Martinschizza, near Sussak, has been started. The new harbour will be built in the Bay of Martinschizza through the construction of a large breakwater in water about 35 metres deep. The bay is well sheltered from the Northern winds by a chain of high mountains. The port of Martinschizza is to be connected to the main railway line between Sussak and Zagreb.

Following information secured from the Greek Ministry for National Economy during the first four months of 1930, 1,005 ships aggregating 1,593,662 net registered tons arrived at Greek ports from foreign countries, and 720 ships with 1,241,629 net registered tons cleared from Greek ports during the above-mentioned period. In connection with the share of the various countries in such trade the following schedule is of assistance:—

	January-April, 1930.			
	Arrivals.		Clearances.	
Flag.	No.	Tons.	No.	Tons.
Greek ...	330	296,412	170	153,496
Italian ...	310	676,238	266	594,616
British ...	85	193,856	72	120,387

The Greek participation to national trade has shown an increase, while the number of foreign ships trading at Greek ports has decreased if the above-mentioned figures are compared to the figures concerning 1929. During the period under review a large number of liners on pleasure cruises have called at Pireaus. Reference must also be made to the progress at Saloniki, where during March, 1930, 120 ships, representing 120,207 net registered tons, arrived; and among them there were 78 Greek ships and 38,517 tons, 18 Italian ships and 32,133 tons, 11 British ships and 16,941 tons, and 4 American ships and 12,626 tons.

According to official statistics which have just been published the traffic through the Corinth Canal during the first four months of 1930 reached the following figures:—

	Steamers.	Sailing Ships.	N.R.T.
January ...	468	144	291,944
February ...	389	132	212,313
March ...	512	272	300,879
April ...	567	297	317,650

The Greek Government has decided to create a free zone in the Port of Pireaus in the territory between the Vassiliadi Shipbuilding Yards and the D. Dionigi corner. The new zone will have an area of 174,000 square metres, and it is expected that this step will lead to an increase of transit trade with the Levant which is now going through Trieste. It is felt that this progress at Pireaus cannot affect shipping at Saloniki which is handling trade with Jugoslavia, Macedonia and a certain portion of Albania.

The question of the port of Saloniki has again been raised in Greek business quarters, and it is understood that, according to an agreement which has just been reached between the Greek Government and the French company which was created in 1896 to operate the Port of Saloniki until 1944, the control of the concern has been transferred to the hands of the Greek Treasury, represented on the spot by the Harbour Board, on payment of a compensation of 8 million drachmas yearly. The Board, which shall have, according to the estimates which have been made, an income of about 25 million drachmas yearly, will undertake important harbour enlargements, including the construction of a breakwater measuring 550 metres in length and 12 metres in depth, and a mole measuring 1,400 metres. This mole will be provided with extensive warehousing and unloading facilities, and among these there will be several large coal electric elevators of Italian make.

In order to appreciate the development of trade at Greek ports it should be taken into consideration that in the course of the past few years the Greek Mercantile Marine has considerably increased, as can be noted from the following figures:—

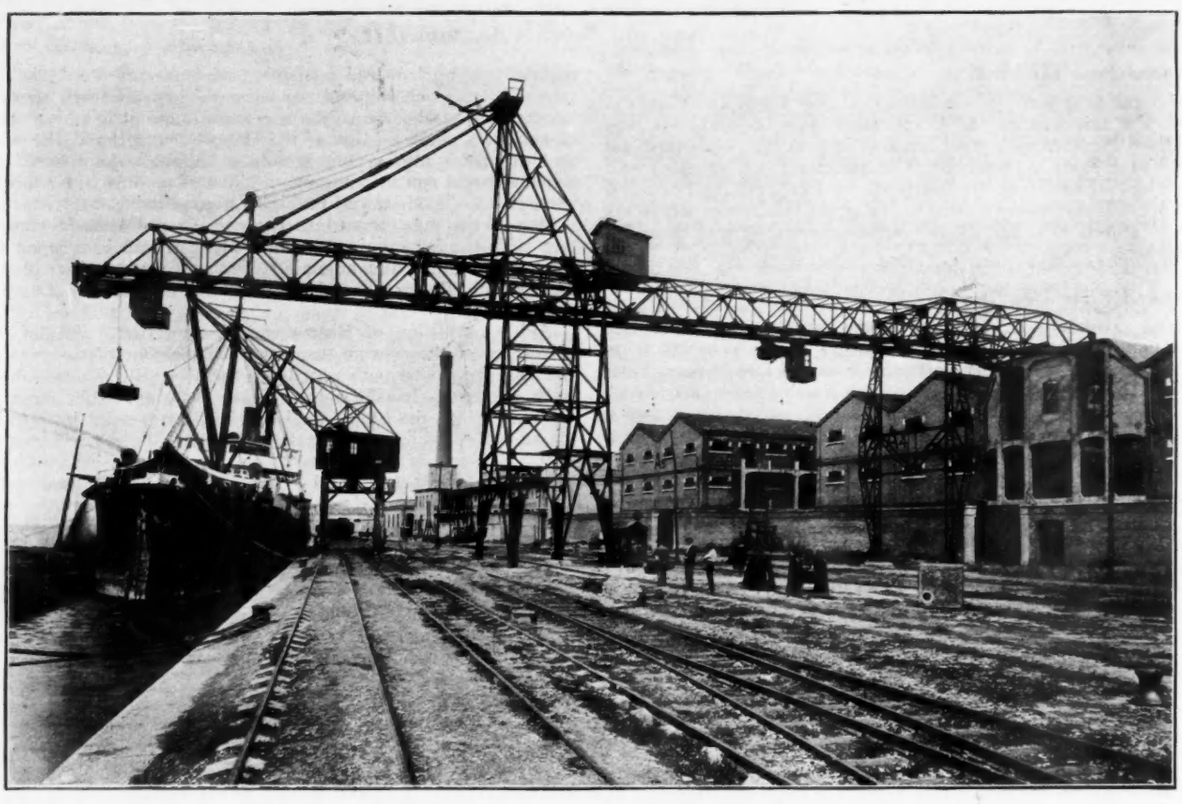
	Ships.	Gross Tonnage.
1914	407	821,000
1920	335	490,000
1921	440	685,000
1922	418	737,000
1923	431	762,000
1924	437	829,000
1925	467	923,000
1926	472	930,000
1927	504	1,111,000
1928	558	1,266,000
1929	565	1,288,000

The Anglo-Hellenic Coast Line, Ltd., has decided to establish a new service from Pireaus to Alexandria, Istamboul and Smyrna, and one to the Dodecanese Islands and Egypt.

According to information from Stamboul it would appear that shipping at that port during 1929 has not shown many changes in respect to 1928. Arrivals at Istamboul during 1929 included 3,887 foreign ships totalling 7,536,294 net registered tons, showing an increase of 461,484 tons in respect to 1928; 2,781,201 tons of goods were unloaded and shipped through the Port of Istamboul during 1929, and of these about 1,900,000 tons have been exported and 800,000 tons have been imported. There has been a rather increasing activity in connection with the export of coal from Turkey, and it is announced that the Turkish Government is planning to increase unloading facilities at that port. It is stated that four 50-ton electric coal elevators are to be provided.

The Turkish Mercantile Marine now includes 70 cargo boats, representing 45,000 net registered tons; 42 passenger steamers, representing 48,000 tons, and about 104 ships representing 10,000 tons, while in 1913 it did not represent even 30,000 net registered tons. This is leading the Turkish Government to improve harbour facilities, and some weeks ago several representatives of German and Dutch firms visited Turkish ports with the view of securing orders for mechanical unloading facilities.

It is announced that important harbour improvements are to be carried out at Beyrouth with the exploitation of the Bay of Medawar, which, being closed on three sides, can easily be transformed into an important harbour by the construction of a breakwater on the fourth side, and the building of quays and jetties. Total quayage at Beyrouth will reach, when these works are completed, about 5,000 metres.



Port of Venice. Air Transporter (Exterior View).

Italian Harbour Affairs.

SHIPPING is generally feeling the effect of the general trade depression, and although the total maritime trade is showing a certain increase it should be noted that trade at certain ports has shown a decline, and an idea of the situation can be obtained from the following figures of the most important commodities unloaded at the main Italian ports from January to May, 1930:—

		Coal.	Cereals.	Cotton (Tons).	Wool.	Oilseeds
Genoa ...	1930	1,183,307	331,984	73,950	22,457	40,541
	1929	1,199,047	329,664	90,722	26,064	108,673
Savona ...	1930	618,011	7,778	—	—	—
	1929	647,147	—	—	—	—
Leghorn ...	1930	417,732	40,495	1,322	324	25
	1929	395,549	58,936	1,361	367	32
Civitavecchia	1930	334,897	31,700	—	—	—
	1929	202,741	32,542	—	—	—
Naples ...	1930	288,968	119,981	6,090	139	24
	1929	407,873	237,084	4,697	158	5,205
Palermo ...	1930	166,706	11,516	—	—	—
	1929	116,158	23,072	—	—	—
Catania ...	1930	57,200	21,162	—	—	—
	1929	52,486	44,012	—	—	—
Trieste ...	1930	139,057	1,861	17,761	846	15,822
	1929	147,080	5,775	23,464	265	62,515
Fiume ...	1930	37,025	592	—	—	—
	1929	26,953	1,304	—	—	—
Venice ...	1930	509,171	51,724	22,770	1,987	4,448
	1929	472,222	174,032	20,855	2,269	3,122

The Italian Government has recently raised the import duty on foreign wheat to 16.50 lire gold per cental, and special steps have been taken to protect the olive oil industry, and as a matter of fact the imports of oil seeds has decreased, but it cannot be said that these steps are more or less influencing the development of trade at each port, as, while at certain ports the imports of wheat have decreased, at Genoa it has shown an increase.

The general meeting of the Consorzio Autonomo del Po to di Genova has just been held. Commander Negrotto Cambiaso, President of the Consorzio, referring to this trade depression—which has a general character all over the Mediterranean, and does not seem to be confined to Italy only—pointed out that it does not mean that the efficiency of the port of Genoa has been in any way affected. In 1929 shipping at Genoa represented 22.90 per cent. of the total trade at Italian ports, against 23.53 in 1928 and 22.04 per cent. in 1927, which means that the share of Genoa in the Italian maritime trade is about the same. The head of the Consorzio spoke of the inauguration of the new warehouse on the Passo Nuovo Quay destined for goods which are transhipped at Genoa by means of motor trucks; of the extension of the Molo Cagni by about 40 metres, and on the extremity of which will be erected a green light to replace the present lightbuoy; of the construction of the Principe Umberto breakwater which is making further progress towards the Polcevera mouth, etc. At present the breakwater has a length of 2,080 metres. In order to enable the laying down of concrete caissons in calm water in the new Benito Mussolini Bassin, which is now under construction, a mole of about 813 metres is being built on the left-hand side of the Polcevera mouth, while the protection of the water is being insured in the Vittorio Emanuele Bassin by the extension of the Principe Umberto breakwater.

In connection with previous reports concerning the enlargements which have been made necessary at Genoa by the decision of the two largest Italian lines, the Lloyd Sabaudo and the Navigazione Generale Italiana, to build two liners of 50,000 tons gross, the increase in the length of drydock No. 3 on the Molo delle Grazie has already been commenced. Six large concrete caissons have already been laid down to form the head of the new drydock. The cutting of the end of the Molo Vecchio, in order to enlarge the entrance in the port of Genoa, has also made further progress. In the course of the last few weeks work has been commenced in order to increase the length and depth of the water around the Andrea Doria Jetty, and in this way three liners of 50,000 tons gross will have berthage space in the port of Genoa at one time. According to the statements made by the President of the Consorzio Autonomo del Porto the facilities on the quays and the new warehouse on the Assereto and the Caracciolo jetties and on the Passo Nuovo have now been completed, and this zone is now exclusively used for general cargo trade. The unloading facilities existing at present in the port of Genoa include 44 electric coal elevators, 109 electric cranes, 78 hydraulic cranes, 2 hand cranes, 22 cranes and elevators in the interior of the warehouses, etc. In order to encourage the transit trade of machinery and aluminium from Switzerland and of acetic acid from Germany the loading tariffs have again been cut down. A new cut of 5 per cent. has been made in connection with unloading tariffs.

Steps are being taken to improve the development of trade at Savona, and the Consiglio Provinciale dell'Economia (Chamber of Commerce and Industry) at that port has taken up the question of inaugurating the export of metal products and machinery from Piedmont to overseas markets through the regular lines which are now calling at Savona. It is being planned for this purpose to cut down freight rates from this port to overseas ports. The building of six new electric cranes to speed up the unloading of coal is contemplated.

The quantity of goods loaded at Italian ports as ships' supplies has reached, during the period from January to March, 1930,

Italian Harbour Affairs—continued.

331,000 tons, against 280,000 tons during the corresponding period of 1929. There is an increase of trade in connection with foreign ships.

The Consiglio Provinciale dell'Economia of Bari has under consideration the question of the opportunity of reducing unloading charges and tariffs on wheat and motor-cars have been cut down by 50 per cent. Reductions have been carried on also on unloading charges on horses and cattle at Ancona. Facilities are being granted at Venice in connection with the loading charges on rice exported to overseas markets, while important reductions have also been made on coal unloading charges.

On the other hand, while these efforts to cut down the cost of unloading at Italian ports are being undertaken, much is hoped to be gained through the development of facilities and, as a matter of fact, new dredging works are undertaken at Molfetta, and in Venice the dredge " Venezia " has again started working in the Porto di Lido. Furthermore, five new electric cranes of 4 and 5 tons have been fitted on the quays, where coal trade is handled at Venice in order to speed up the unloading of the ships. A new agreement has been signed between the Government and the Sindacato Italiano Costruzioni Appalti Marittimi in connection with the harbour enlargements to be carried on at Bari. According to a statement which has just been issued, the new works include the extension of the outer breakwater to shelter the new dock under construction, and the construction of a new jetty to be used for the the coal trade, etc. The cost of the new works is estimated to reach 72 million lire, and will have to be completed by June 30th, 1937.

What, however, is one of the most striking achievements of Italian harbour engineering is the construction of the Trieste Maritime Passenger Station, which has been built in concrete in less than a year. The new building, which covers practically the whole area of the Molo Bersaglieri, has two floors, where passengers landing can undertake all the necessary operations, and there is also a restaurant, post office, etc. Passengers will land, as in Genoa, on the second floor directly from ships, and will leave by trains arriving alongside the quays, or with taxis through the first floor. It has been necessary to increase the length of the Molo Bersaglieri by about 30 metres in order to enable large liners to find room there. The two new warehouses Nos. 64 and 65, the building of which were completed in 1929, are now wholly equipped with unloading facilities, and have been put into operation. Special attention has been paid to the cranes, as these warehouses are to be used for parcels export trade to overseas ports. Now that Mole V. has been completed the opportunity is being considered of undertaking the construction of the remaining part of the Porto Franco Duca d'Aosta, particularly in view of the extensive programme which is being worked out by the Trieste steamship companies, including the Lloyd Triestino, which is to start an express service next September from Trieste to Shanghai with ships of 17 knots, to which will be added, after the maiden trip of the new 46,000 gross tons liners, one of the ships now trading between Italy and South America, and the Navigazione Libera Triestina is to start a passenger service with ships of 15 knots from Italy to San Francisco di California.

Aden Port Trust.

The following are the returns of shipping and trade of the Port of Aden for the month of May, 1930:—

	No.	Tonnage.
Merchant vessels over 200 tons	124	509,234
Merchant vessels under 200 tons	13	2,196
Government vessels	8	17,468
Dhows	160	5,068
PERIM.		
Merchant vessels over 200 tons	16	58,391

The number of merchant vessels over 200 tons that used the Port in May, 1930, was 124, as compared with 127 in the corresponding month last year, and the total tonnage was 509,000, as compared with 510,000.

Excluding coal, salt, fuel oil, military and naval stores and transhipment cargo, the total tonnage of imports in the month was 9,500 and of exports 5,300, as compared with 11,200 and 6,400 respectively for the corresponding month last year.

The total value of imports excluding Government stores was Rs. 59,06,000, as compared with Rs. 76,55,000 for May, 1929, and of exports Rs. 38,97,000, as compared with Rs. 45,91,000.

The total value of both imports and exports together was Rs. 98,03,000, as compared with Rs. 122,46,000 for the corresponding month last year.

Imports during the month were above those for May, 1929, in the case of seeds, sugar and twist and yarn, and below in the case of coffee, grain, pulse and flour, gums and resins, hardware, hides raw, skins raw, piece goods grey, white, printed or dyed, tobacco unmanufactured and manufactured, and treasure private.

TRADE OF THE PORT.

Article.	Unit.	Imports.		Exports.	
		Quantity.	Value Rs.	Quantity.	Value Rs.
Coal	Tons	4,466	1,37,178	0	0
Coffee	Cwts.	6,136	2,46,030	8,043	4,38,287
Grain, Pulse and Flour	,,	53,784	4,03,274	28,225	2,09,755
Gums and Resins	,,	2,413	51,887	2,639	57,087
Hardware	—	0	17,893	0	9,280
Hides, raw	No.	3,260	7,390	7,570	14,920
Oil, Fuel	Tons	42,659	12,79,770	0	0
,, Kerosene	Gls.	44,008	33,927	10,216	7,662
,, Petrol	,,	17,276	12,101	10,096	12,297
Salt	Tons	0	0	15,700	1,49,240
Seeds	Cwts.	3,526	46,065	393	6,800
Skins, raw	No.	199,060	1,47,021	353,320	3,50,525
Sugar	Cwts.	20,457	1,39,924	15,983	1,29,638
Textiles—					
Piece Goods, Grey	Yds.	2,971,134	6,34,690	3,466,790	7 24,756
,, ,, White	,,	548,593	1,54,574	443,060	1,18,041
,, ,, Printed or Dyed ...	,,	674,695	2,13,270	611,723	2,23,006
Twist and Yarn	Lbs.	402,857	2,65,414	299,413	2,10,646
Tobacco, Unmanufactured	,,	2,578,688	6,52,316	709,212	1,71,188
,, Manufactured	,,	32,704	34,588	38,024	41,116
Other Articles	No. of Pkges.	68 909	10,41.903	17,115	5,74,060
Treasure, Private	—	0	3,86,931	0	4,48,980
Total ...	—	—	59,06,146	—	38,97,484

Exports were above those for May, 1929, in the case of coffee, piece goods grey, white, printed or dyed, twist and yarn, tobacco unmanufactured and treasure private; and below in the case of grain, pulse and flour, gums and resins, hardware, hides raw, seeds, skins raw, sugar and tobacco manufactured.

Port Improvements at Patras.

The Patras Harbour Commission has decided to raise the height of the breakwater of Patras Harbour by 2 metres, and work on the above is now proceeding.

Notes of the Month.

Mid-Summer Overhaul of Big Ships at Southampton.

July has seen the mid-summer overhaul of most of the big ships taking place at Southampton, and many of the Atlantic liners have been undergoing their short summer course of "beauty treatment." The Cunard liner "Berengaria" was the first to be put on the 60,000-ton floating dock for this purpose, and she has been followed by the "Mauretania," and the two White Star liners, "Olympic" and "Majestic." The "Aquitania" and the "Homeric" have not been taken off their normal service, as they both received attention in March. Very little time is spared for this "clean-up," for owners can ill afford to have first-class tonnage out of commission at a time when business reaches its high-water mark. Five or six days was about the usual length of time the vessels were on the floating dock.

Vickers, Limited, Half-year Dividends.

The directors of Vickers, Ltd., Vickers House, Broadway, Westminster, S.W., give notice that the following interim dividends for the half-year ended June 30th, 1930, will be paid to the holders of the Preferred Stock and Preference Shares of the company who are registered in the books of the company on Saturday, the 9th day of August, 1930:—2½ per cent. on the Preferred 5 per cent. Stock (less income tax), 2½ per cent. on the 5 per cent. Preference Shares (less income tax), and 2½ per cent. on the Cumulative Preference Shares (free of income tax). Payment will be made on Friday, the 29th day of August, 1930. The transfer books of the company relating to these issues will be closed from Monday, the 11th day of August, to Saturday, the 16th day of August, 1930, inclusive.

New Motor Tug for Thames Conservancy.

Messrs. James Pollock, Sons and Co., Ltd., 3, Lloyds Avenue, London, and Faversham, have received instructions from the Thames Conservancy to build a single screw steel motor tug—length 32-ft. 6-in., breadth 9-ft., depth 4-ft. 6-in.—which is to be fitted with a 54 b.h.p. "Gardner" 3-cylinder heavy duty engine.

We hope later to publish further details of this interesting craft, which is for service in connection with the vast new programme that has been entered upon by the Thames Conservancy, for whom Messrs. Pollock are already building twelve barges.

Messrs. Fried. Krupp Grusonwerk A.G., Magdeburg (Germany).

The above firm have just celebrated their 75th anniversary, and in so doing have issued a very extremely interesting book detailing their history from the beginning.

Illustrations are also given in the book showing the various departments of their workshops, and also some of the contracts which have been carried out by them at various times.

The Bi-Centenary Celebrations of Messrs. W. & T. Avery, Ltd.

Messrs. W. and T. Avery, Ltd., the well-known makers of weighing appliances, whose works are situated at Soho Foundry, Birmingham, celebrated their bi-centenary on Tuesday, July 1st, 1930, with a tour of inspection of their works, which was followed by a luncheon.

The inspection of the works, which cover a surface area of 25 acres and employ over 2,000 workpeople, proved of great interest. A visit was first paid to some old cottages which had been standing for some considerable time and in a good state of preservation. Next came the packing department and the general drawing office. In turn, visits were paid to the experimental department, industrial visible weigher shop, counter scales erecting shop, tinsmiths' department, die-casting shop, the weighbridge shop, the testing machine department, foundry, blacksmiths' shop, woodworking department, chart making department, the laboratory, heat treatment department, and the automatic shop.

Messrs. W. and T. Avery, Ltd., are to be congratulated on reaching their 200th birthday, and the progress which has been made, even in recent years, is plainly visible after a tour of their works; and it can be readily understood why their name is a household one throughout the world.

London's Shipping.

During the week ended July 25th, 1,099 vessels, representing 1,031,268 net register tons, used the Port of London; 590 vessels (850,307 net register tons) were to and from Colonial and foreign ports, and 509 (180,961 net register tons) were engaged in coastwise traffic.

Five vessels discharged meat cargoes during the week: three from Australia and New Zealand, the "Baradine," "Port Huon" and "Port Adelaide," and two from South America, the "Stuart Star" and "Marquesa." Altogether some 286,500 carcases of lamb and mutton, over 65,000 quarters of beef, quantities of pork and rabbits, and 22,000 packages of sundries were distributed to the London market and throughout the country or placed in cold storage.

Weser Shipping during June, 1930.

In June, 1930, 788,471 net registered tons seagoing vessel traffic arrived in Bremen, against 833,429 net registered tons in that since the 9th the depth of 1.00 metre from Hanover-Munden could only be maintained by means of supplies from the Edertal reservoir. This is the second time this year that the supply from the reservoir has been required. The first time occurred in the middle of February, lasting to March 9th. Due to considerable rainfall which commenced about a week later, a catastrophe was avoided at the time and the Edertal reservoir filled up. In 1929 it was quite impossible to fill the reservoir completely.

The average depth at Minden was 1.38 metres, more than 50 centimetres lower than in the previous month.

Goods traffic through the Bremen Weser Lock decreased considerably. While in May in both directions 177,700 tons were transported, in June only 147,300 tons were shipped. However, the decrease was only in down-stream traffic. This decreased from 147,100 tons to 114,900 tons, due to coal supplies being 19,300 tons less, gravel and stones 10,900 tons less, and potash and salt 4,300 tons less. Up-stream traffic increased from 30,600 to 32,400 tons, as approximately 7,600 tons more grain were shipped than in May. Other goods showed decreases.

Port of Halifax, Nova Scotia.

The Halifax Harbour Commission has awarded to the Standard Construction Co., Ltd., a contract for the erection of a new pier to be known as number 5. The pier, costing $500,000, will be 627-ft. long by 177-ft. wide, located next to Pier 4, and will provide a 33-ft. depth of water. Construction is to begin immediately.

A Busy Shipyard.

With a trade depression more or less general throughout the world, the heavy industries usually are the first and last to suffer. It is therefore encouraging to hear that James Pollock, Sons and Co., Ltd., of 3, Lloyd's Avenue, London, have been very busy since the beginning of the year, and after having despatched a number of completed craft they still have contracts in hand for over 30 vessels of various types to build at their shipyard at Faversham, Kent.

Amongst the vessels under construction are three tugs for the Thames, one with 400 b.h.p., one with 270 b.h.p., and the other with 120 b.h.p.; a tug and survey vessel with 60 b.h.p. for service abroad and a small launch tug with 25 b.h.p. Another craft that is of considerable interest is a twin-screw tunnel tug with 240 b.h.p. for the service of a foreign government.

Amongst the larger craft are two full-powered coasters, a passenger vessel to carry 150 persons, and a motor tanker. All these powered craft will have Bolinder heavy oil engines.

Besides these craft there are over a dozen dumb craft, including tank barges and a lighter of over 300 tons deadweight, on order.

Port of Manchester.

The new season's shipments of paper began in June with cargoes from Newfoundland and pulp wood imports recommenced with two steamers from Leningrad.

Timber traffic, which opened the year well, is being strongly sustained: twelve full cargoes, mostly Scandinavian, arrived in the past month.

Traffic from the Pacific Coast ports has been well maintained. There have been good homeward cargoes from India, principally cotton, cotton seed and grain.

A noteworthy arrival during the month was the "Trojan Star" direct to Manchester from Hobart and Beauty Point with a cargo of apples for Manchester and other English markets. The cargo, over 200,000 cases of apples and pears, is said to be the largest single shipment of Empire fruit ever made to this country.

Cargoes of whale oil reached the port from South Georgia and South Shetland.

Exports during the period included rolling stock for the Argentine: railway coaches left the Canal on the s.s. "Beljeanne" for Buenos Aires. Further exports of rolling stock include consignments of locomotives for India in the s.s. "Beldis" during the current month.

The delegation of Virginian business men, representing the Virginia State Chamber of Commerce, who visited Manchester in June, made a tour of the docks and exchanged greetings from the deck of the Canal Company's tender with the crews of the American ships in port at the time.

The Port of Sourabaya.

Introduction.

THE total coastline of the islands of the Dutch East Indian Archipelago about corresponds with the circumference of the earth. Scattered along this coastline are found some 500 large and small harbours, concerning which the following may be told.

In former centuries, when shipping was still entirely indigenous and took place only with vessels of very moderate dimensions and a light draught, the river mouths and creeks formed natural harbours, which offered a safe anchorage and moreover afforded an opportunity to either bring goods farther from the interior or to take them there.

Where an entrance of this kind was lacking and where, nevertheless, settlements of people had created commerce and shipping, an attempt was made to seek shelter in bays and on roadsteads. At some suitable spot the vessels were simply run up on the beach.

Afterwards, when the vessels took to international lines and began to be of larger dimensions, the river mouths for the most part proved worthless for the new ships with their heavier draught because of the bank, sand, or port-bar formation.

They were therefore forced to make use of favourable tides as much as possible or to drop anchor outside of the harbour.

The latter method met with little difficulty since in these regions are found many stretches of water in the neighbourhood of river mouths, sheltered by small islands, peninsulas (tandjoengs) or reefs, in which ships can find a comparatively safe anchorage and where the transhipment in native proas, which bring the goods to and from the shore, can take place without much trouble.

At some places, specially favourably situated for commerce, the traffic increased to such an extent, however, that it became profitable to improve the harbour-entrances. Originally this was done by laying dams across the shallow places vertically to the coast and by dredging a passage between them.

This artificial condition, however, required a continuous upkeep, for generally the river at some seasons brought up so much mud, that again and again banks formed themselves anew for the newly-shaped river mouth and the coastline replaced itself in the direction of the headends of the dykes.

Repeated dredging and lengthening of the dykes were the results of this; so originated those peculiar harbour canals, which are still found, for instance in Batavia, Semarang, Sourabaya, Pasoeroean and elsewhere.

Near the mouth were stationed beacons and lighthouses in the interest of shipping, while, to insure the collecting of import and export duties and excises, custom offices were also constructed there.

At these last establishments all lighters had to land, sometimes entirely to be unloaded, before receiving permission to sail on to storages located above-stream. As a result of the dyke-lengthening and coast extension described above, the location of the custom house became too unfavourable for a reasonable expansion of the commercial field, and a branch office was therefore established more seawards.

Where no harbour existed and the vessel had to remain lying at anchor in the open sea or in the bay, simple piers were built out into the sea, at which the vessel itself or the lighters, which took care of the goods transport, could land.

The custom house was then built at the shore end of the landing place.

When the vessels assumed increasingly larger proportions and steam navigation had been introduced in the middle of the last century, while commercial traffic increased enormously in the rapidly-developing provinces, such confusion arose in some harbours and such stagnation and delay resulted in the traffic, that inevitably radical improvements had to be made.

At first an attempt was made to master conditions by extending the storage space, increasing the number of landing places, enlarging the lighter fleets and similar means. These measures, however, proved to bring no effective solution and gradually the conviction grew that this could only be found in a direct, well-equipped connection between quay and ship.

The herewith accepted principle of direct transhipment, with which the third stage of harbour development was entered upon, brought with it the construction of quay walls and piers situated at deep waterfronts.

At the same time shipping was freed from the custom house regulations, which had so long been in force, by no more having the goods taken to a certain specified place for inspection, but of directing the Custom House officials in the performance of their duties, to the goods, which were removed from the ships and stored in sheds and neighbouring storage places alongside the quays.

Along this line, taken 19 years ago under the guidance of G. J. de Jongh, at that time Director of Municipal Works at Rotterdam, and Dr. J. Kraus, ex-professor of the Technical University of Delft, the Dutch East Indian harbours are proceeding to become entirely up-to-date enterprises.

Figures of the Indies as a Whole.

An idea of the significance of the Dutch East Indian harbours may be given by the following statistics of the shipping, showing the number and net capacity of the private merchant vessels (steamers as well as sailing vessels and lighters) during the years 1911 up to and including 1928:—

	Arrived Ships.	
Year.	Number.	Net capacity (cubic metres).
1911	106,000	81,901,000
1914	104,500	94,413,000
1918	112,900	62,171,000
1919	113,300	79,233,000
1920	103,200	92,250,000
1921	108,300	100,973,000
1922	107,700	102,541,000
1923	113,000	116,403,000
1924	115,000	130,500,000
1925	119,900	140,018,000
1926	122,800	151,719,000
1927	130,400	161,228,000
1928	135,600	183,470,000

An official review of the figures concerning the value of the freight traffic (import and export) of the entire Dutch-East-Indies over the years 1905-1928 gives the following table:—

	Value in Millions of Guilders.		
	Import.	Export.	
Year.	Value.	Year.	Value.
1905	196.2	1905	292.0
1910	315.0	1910	412.7
1915	372.3	1915	758.2
1920	1,116.21	1920	2,228.9
1921	1,077.85	1921	1,188.70
1922	691.09	1922	1,136.20
1923	612.08	1923	1,266.12
1924	678.27	1924	1,530.61
1925	818.37	1925	1,784.79
1926	855.70	1926	1,568.93
1927*	860.80	1927*	1,622.15
1928*	910.20	1928*	1,580.70

*By approximation.

Sourabaya Port.

Situated in Eastern Java, Sourabaya is one of the biggest and, no doubt, the most important commercial town of the Dutch East Indies.

The population consists of 24,625 Europeans, 36,850 Chinese, 5,247 Arabs and other Orientals and 188,977 natives, the town being about 7½ miles long and 2 miles wide.

As Tandjong-Priok (Batavia) is the import and export harbour of rapidly-developing West-Java, so Sourabaya occupies this position for the very important east-part of Java, the most fertile part of the island.

It is not only due to this hinterland, however, that Sourabaya has been able to develop into one of the most important harbours of the Archipelago; her very favourable natural location on a safe only rarely stormy roadstead has also been an important factor.

This favourable location of a roadstead, where vessels could anchor unhindered and discharge or load their cargo with the help of lighters, which could reach the heart of the city going along the Kali-Mas (one of the outlets of the Brantas River, on which Sourabaya is situated) has not been able to prevent, however, that here also the slow transhipment into lighters had to be replaced by a direct connection between vessel and shore.

It was only 19 years ago that a decision was made in favour of this improvement. It is true, that already in 1875, after the Kali-Mas had proved incapable of handling without stagnation the ever-increasing traffic, resulting from the growing commerce, a plan was projected, whereby seagoing vessels were given an opportunity to load and discharge freight in direct connection with the shore, but this plan was not carried out.

For a long time afterwards the solution was still sought in plans, wherein the lighter formed the link between vessel and warehouse, until in 1906 the late Chief Engineer W. E. van Goor made a sketch for a modern seaport.

In 1909 Prof. J. Kraus, Rector Magnificus of the Technical University of Delft and designer of several South American harbours and G. J. de Jongh, the man of Rotterdam's harbour, were invited by the Government to give their advice regarding the harbour improvement of Sourabaya.

In 1910 their report on the improvement of the harbour of Sourabaya appeared in which they suggested among other things that a great part of the commercial traffic be transferred from the over-crowded Kali-Mas to a spacious,

CHART OF THE FAIRWAYS OF SOERABAJA

ACCORDING TO THE NAUTICAL CHARTS 1916/17 AND 1923 OF THE WESTERN ENTRANCE, 1925 OF THE EASTERN ENTRANCE AND ELDER DATA.

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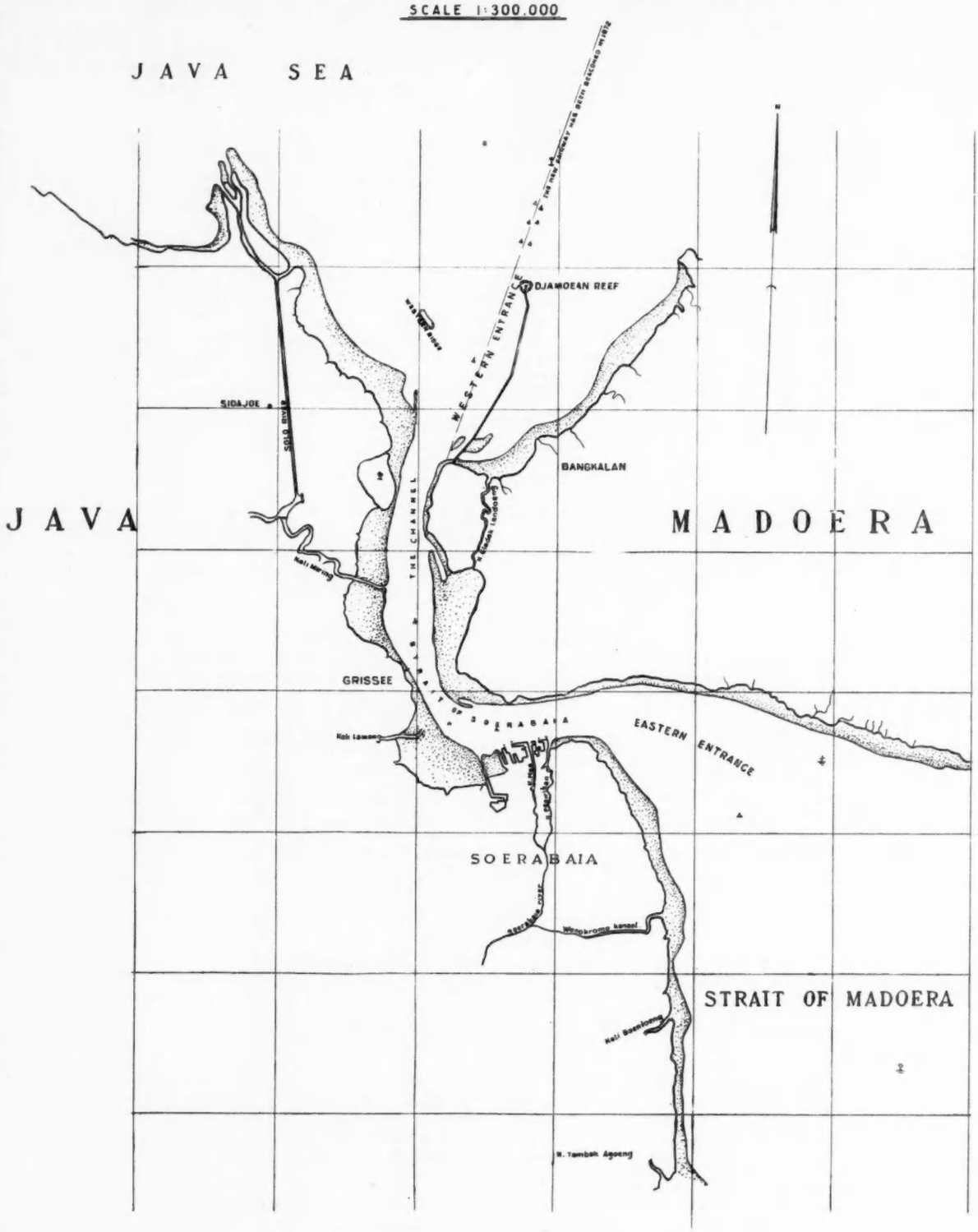

PORT OF SOERABAIA.

MANAGING DIRECTOR;–Mr. H.W. VAN DER VOORT, M.R.I.,C.E.

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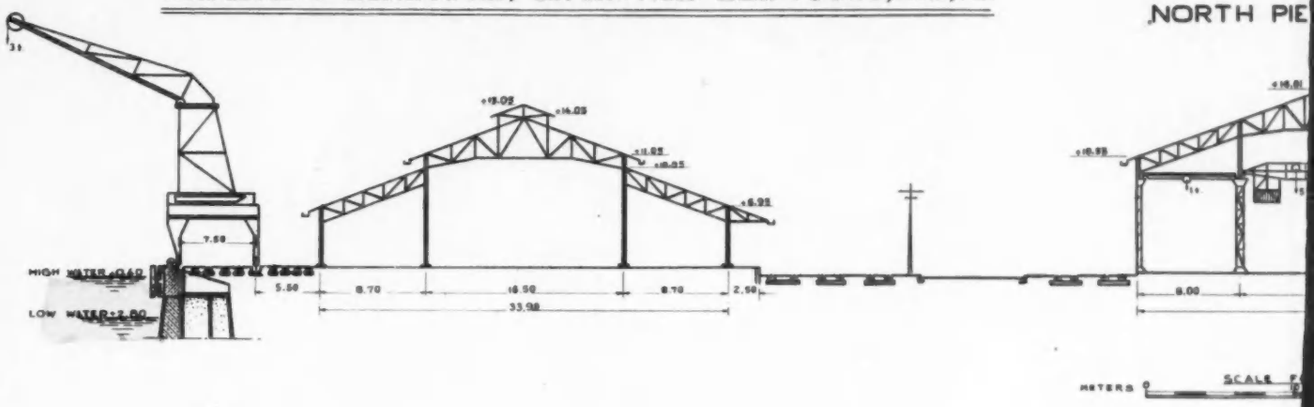

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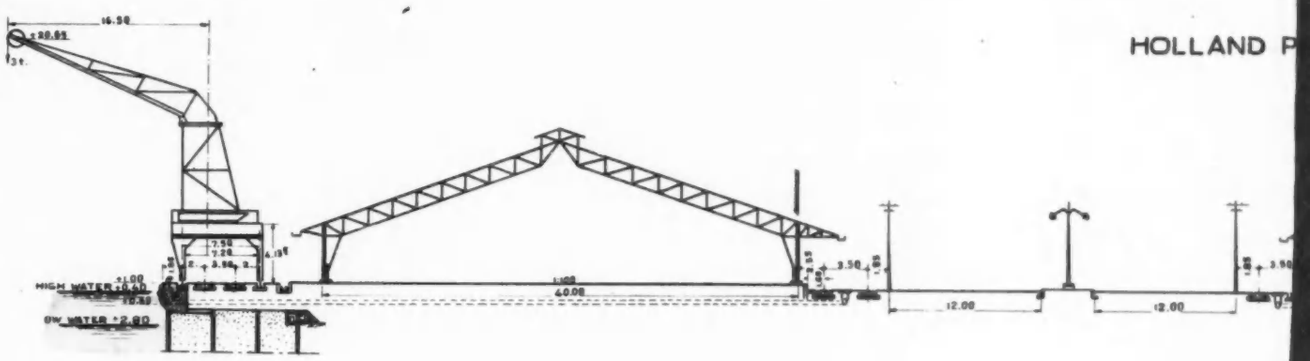

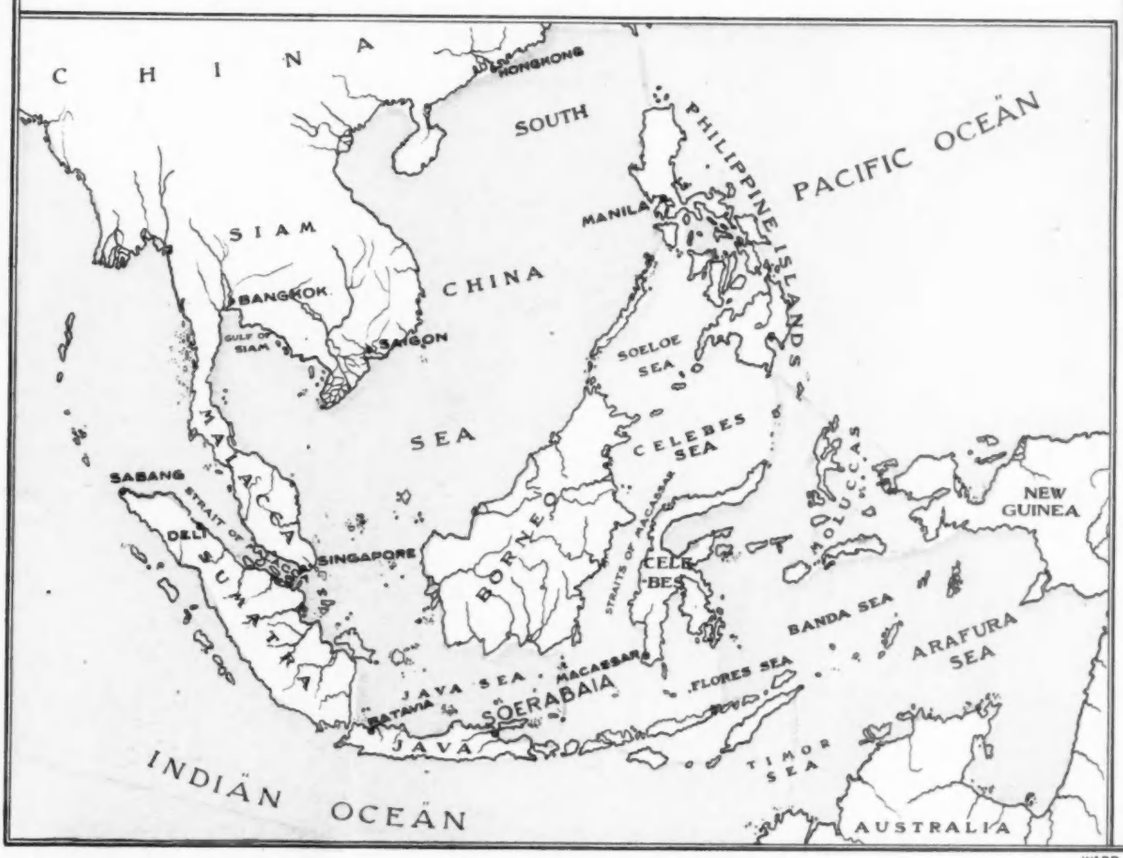

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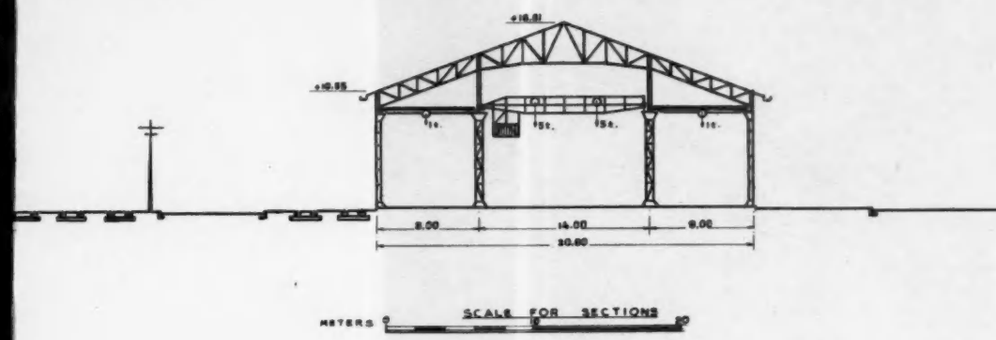
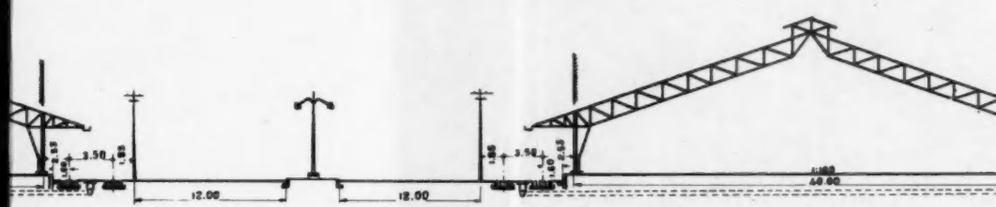
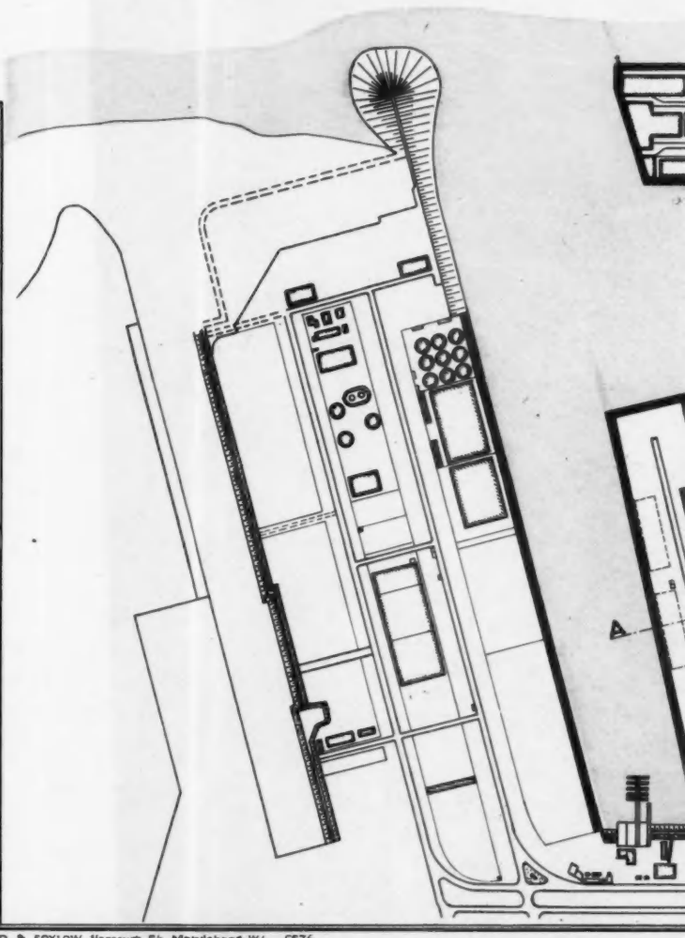
NORTH PIER SECTION C-D



HOLLAND PIER SECTION A-B





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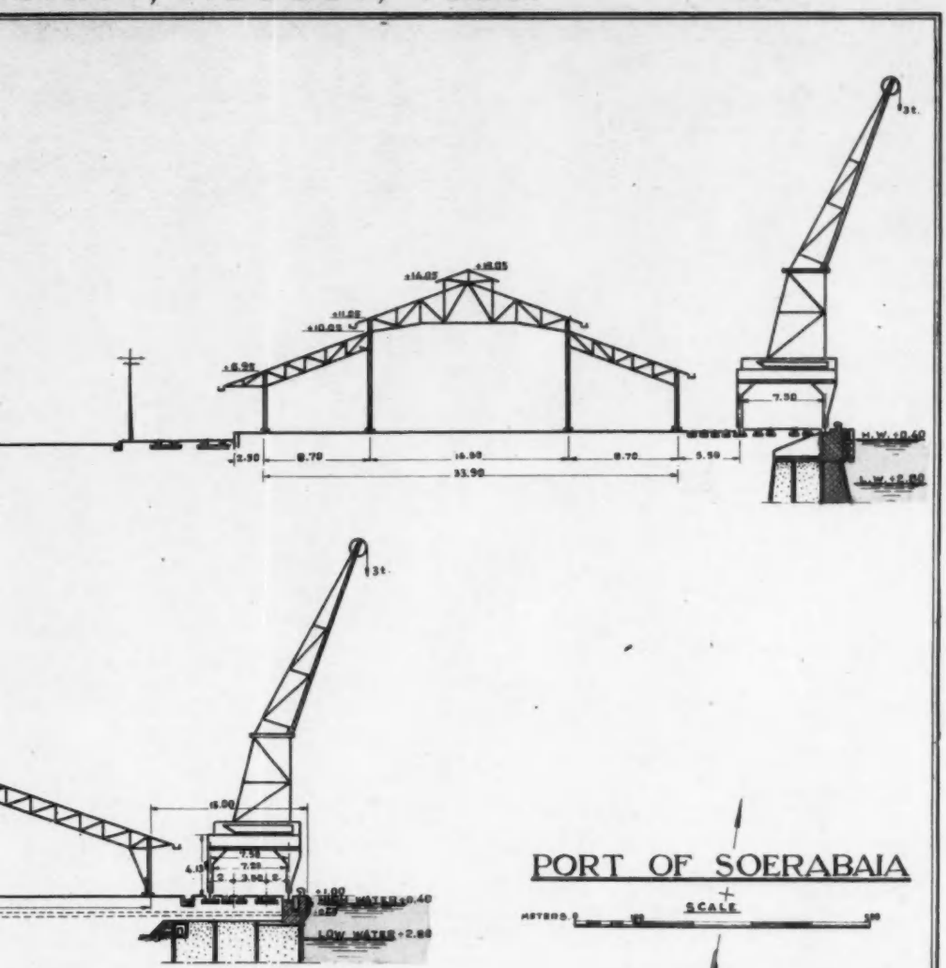
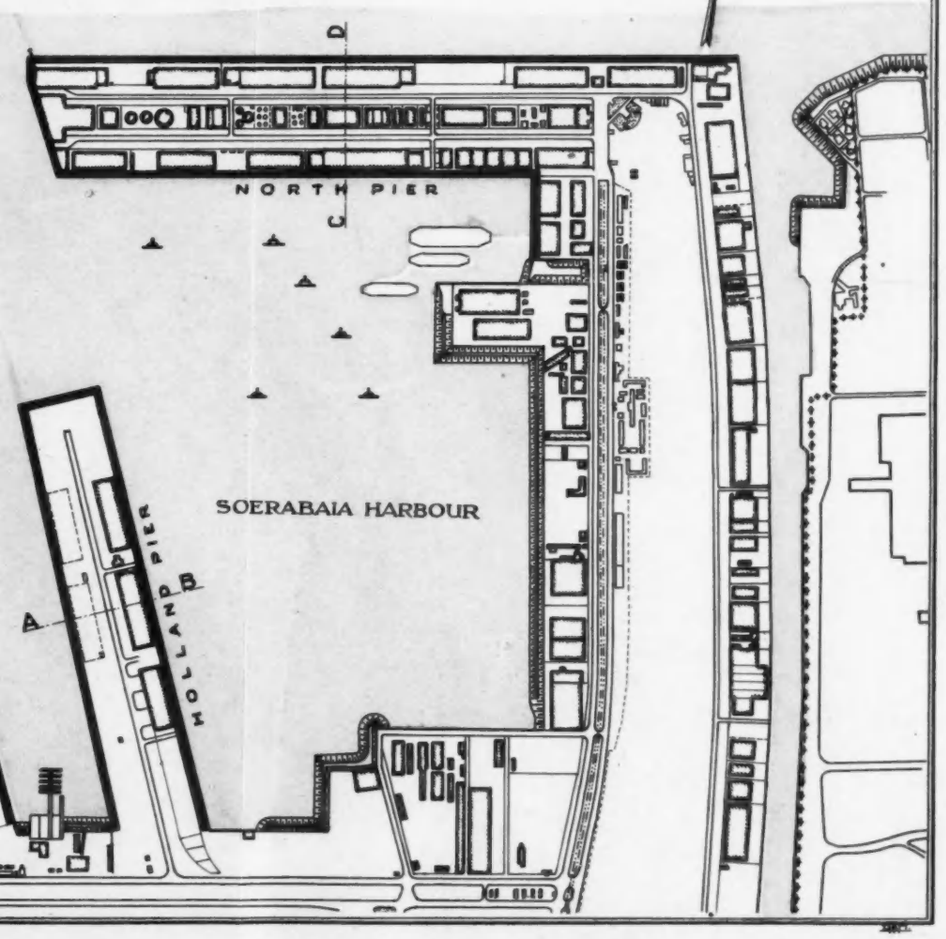


PORT OF SOERABAIA

SCALE



The Port of Sourabaya—continued.

modernly equipped harbour tract, and in which was included a plan of a new harbour located at some distance from the old business centre.

This plan has been carried out and for the rest has served as a guide for the works carried out since 1910.

These works consisted in the first place in the construction of a 200-metre wide pier (the North Pier) west of the mouth of the Kali-Mas and about at right angles to the direction of this river.

The eastern end of the pier was connected with the shore by a 400-metre wide dam running from north to south alongside the outlet of said river.

West of this dam and about parallel with it, another pier (the Genoa Quay) was built out running from south to north. Between the north end of this pier (the Genoa Quay) and the west end of the North Pier there is a 350-metre wide channel opening.

The ground level of the beach located between the shore end of the aforesaid dam and the new pier (the Genoa Quay) was raised with the soil obtained from the dredging of the 80 H.A. large basin, which is bounded to the west by the new pier (the Genoa Quay), to the east by the western bank of the 400-metre wide dam and to the north by the North Pier. The raised ground is destined for industrial purposes and for building tracts.

From the North Pier, the outer quay (the Rotterdam Quay, situated along a 9-metre deep water front), is 1,200-metres in length and the inner quay (the Amsterdam Quay, along which the basin was dredged to a depth of 9-metres), 800-metres in length. The head-end of the North Pier is also closed off by a quay (the Ymuiden Quay).

Along both the outer and the inner quay a strip of 10-metres is left free for railroad traffic and travelling cranes, while a 40-metre wide tract is intended for the building of godowns. On the shore side of both rows of godowns runs a 30-metre wide road.

The works described once being started, their great utility became fully apparent and the increasing demand of interested parties to obtain the use of the completed structures had the result that, even before the completion (in 1917) of the buildings which were in course of construction, the extension of the original plan had to be begun.

The seagoing vessel almost chased the dredger away; everywhere extension of quay length was insisted on in spite of the excellent roadstead and the great number of lighters, although cranes and other mechanical appliances could not at first be obtained on account of war conditions.

A glance at the map states the construction of the port at the end of 1928.

While for the quays first built, a waterfront of little over 9-metres depth under low tide was provided, the newer ones have a waterfront of 10 and 11-metres depth.

The Genoa Quay has a length of 920-metres, the Holland Pier on the east side 780-metres and on the west side 735-metres.

The south part of the Genoa Quay is reserved for coal storage.

For the need of petroleum ships, a landing stage is found at about the north end of the Genoa Quay, from where inflammable materials are stored on spacious tracts behind the said quay.

From the 400-metre wide dam along the River Kali-Mas, parallel with a 20-metre wide strip along the river, is reserved ground 50-metres wide for building plots, besides a width of 30-metres for a road back of these tracts.

To the west of this is reserved 653,000 sq. metres of land for shunting premises, to be used for the harbour service of the State Railways.

The tracts, intended for commercial and other purposes, alongside the eastern bank of the harbour basin, are separated from these shunting premises by a 50-metre wide road.

In the north-east corner of this basin are installed three floating dry docks of 14,000, 3,500 and 1,400 tons lifting power, belonging to the Government and to the Dry Dock Company (Droogdok Mij. " Soerabaia ") respectively which latter exploits these docks and the adjacent small dock harbour.

The company deals with repairs all over the Dutch East Indian Archipelago.

As the lay-out or the harbour of Sourabaya progressed, the cargo traffic displaced itself from the Kali-Mas to the new harbour.

On the western bank of the Kali-Mas, one of the estuaries of the Brantas, the Custom House " Groote Boom " was situated at a distance of about 4 kilometres from its mouth and within the boundaries of the harbour territory.

In the beginning of 1925 this Custom House was discontinued. The cargo traffic by lighter decreased in consequence of the completion of quays. The strong decrease of the cargo traffic by lighter is a direct result of the circumstance that the use of quays by ships has promptly increased.

A survey is given below which shows that of the number of ships calling at Sourabaya in 1927 more than 75.1 per cent. made use of the quays and that of the total quantity of incoming and outgoing cargo more than 63.09 per cent. has found its way via the quays.

In the course of 5 years from January, 1923, up to and including December, 1927, the number of lighters open to traffic decreased from 448 with an aggregate gross capacity of 53,836 cub. metres to 288 with an aggregate gross capacity of 36,787 cub. metres, therefore a decrease in number of 35.7 per cent., and a decrease in capacity of 31.6 per cent.

The number of freight tons transported by lighters in 1923 amounted to 1,441,620 and that in 1927 to 925,846, which shows a decrease of the cargo traffic by lighter within the harbour territory of 35.8 per cent.

USE OF THE QUAYS.

Year.	Percentage of the aggregate number of arrived vessels which used quays.	Vessels moored alongside Quays.			Available Quay-length in hour metres.	Number of hour metres.		Density of use.
		Number.	Capacity in Cubic Metres. Gross.	Nett.		Available.	Used.	Per cent.
1923	40.0	692	766,060,098	471,919,315	2,351	20,594,760	5,309,031	25.8
1924	53.6	1,047	1,213,206,228	746,813,219	2,351	20,651,184	6,560,741	31.7
1925	73.4	1,439	1,605,404,816	983,897,585	3,280	28,732,800	8,299,578	29
1926	81.1	1,594	1,878,150,301	1,152,612,610	3,280	28,732,800	8,420,021	29.3
1927	75.1	1,635	1,962,779,249	1,191,353,458	3,280	28,732,800	8,340,798	29

Entrances to the Port of Sourabaya.

The Port of Sourabaya is situated on the Straits of Sourabaya, which at their north-west part are about 2½ kilometres across and separate the island of Madura from the mainland of Java.

Owing to the protection by the island of Madura the roads of Sourabaya are a safe anchorage.

The communication of the port with the international traffic takes place through the western and eastern entrance of Straits of Sourabaya, called " Westgat " and " Oostgat " respectively. The western entrance is the most important one.

The depth of water in the Straits varies between 31 and 76-ft. at L.W.O.S.T. and in the course of time has not undergone a noticeable change. It is different with the western and eastern entrance, both having bars.

There, considerable increase and decrease of depth took place in the last century. The water on the Bar at the western entrance which has one tide in 24 hours, is 7.90-metres at highest water spring tides and at the eastern entrance, which has two tides in 24 hours, 6.50-metres.

The entrance of the Port of Sourabaya is not or seldom possible for heavy-draft vessels, which however would be able to take up berths in the roads or alongside the quays. In general no urgency initiates from the shipping companies to bring about a considerable deepening of the fairway.

Further Facilities.

(a) Pilot Service.—Pilotage is compulsory. A stationary pilot ship is anchored at the eastern and western entrance of the port, where a pilot may be picked up. Working hours of pilots, day and night.

(b) Lighterage Companies.—Companies owning lighters are: Nieuw Prauwenveer, Oost-Java Prauwenveer, Prauwenveer Kali-Mas, Sourabaya Veem and Ned. Ind. Steenkolen Handel Mij.

(c) Electric Cranes.—28 electric cranes to lift 1½ to 3 tons; 5 electric cranes to lift 2½ tons; 2 electric cranes to lift 2½ to 5 tons; 1 electric crane to lift 5 tons; 2 electric cranes to lift 5 to 10 tons; 2 electric coal transporters having a capacity of 150-200 tons per hour each; 2 floating coal transporters having a capacity of 60-100 tons per hour each.

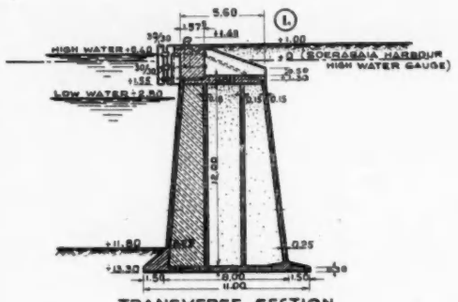
(d) Floating Steam Derricks. Two cranes with a lifting power of 50 and 25 tons respectively.

(e) Tug Boats.

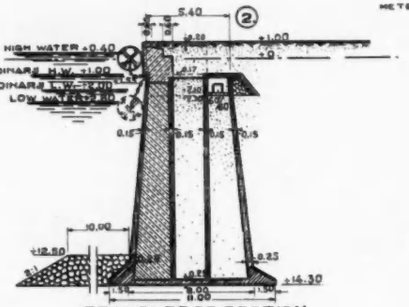
(f) One Floating Fire Hydrant-Boat with a discharge of 4,400 gallons per minute.

(g) Supply of Drinking Water.—Supplied to ships in 1928, 225,465 tons.

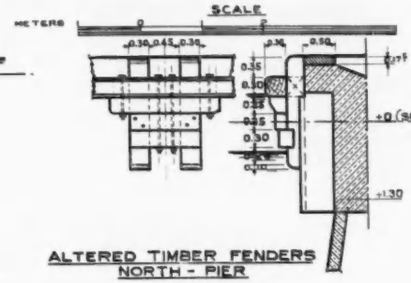
TYPES OF CAISSONS IN THE HARBOUR OF SOERABAIA



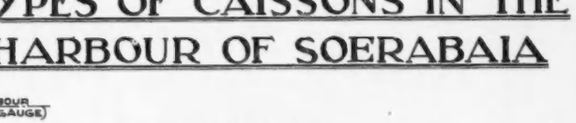
TRANSVERSE SECTION
NORTH - PIER

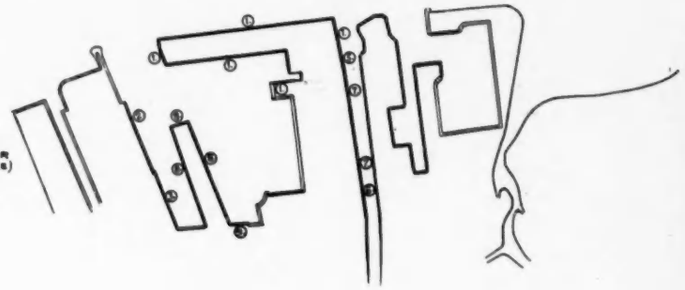


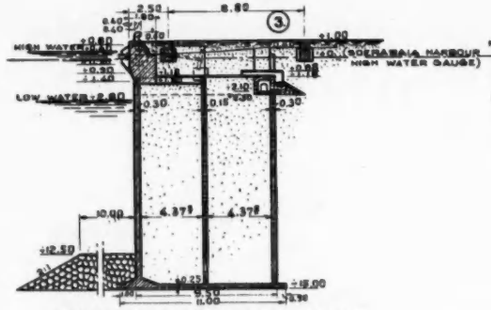
TRANSVERSE SECTION
GENOA QUAY



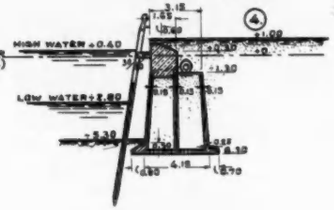
ALTERED TIMBER FENDERS
NORTH - PIER



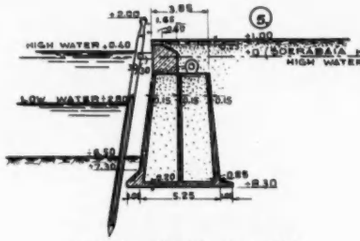




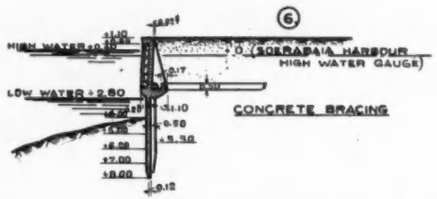
TRANSVERSE SECTION EXTENDED
GENOA QUAY



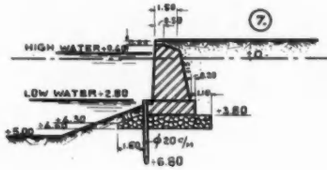
TRANSVERSE SECTION
ENDEH QUAY

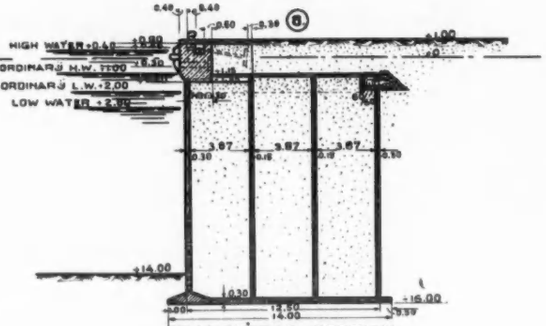


TRANSVERSE SECTION
KALIMAS WALL

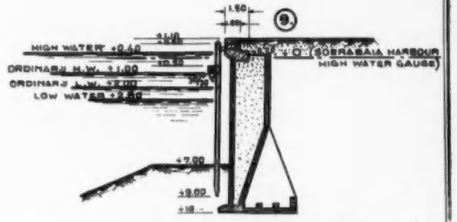


TRANSVERSE SECTION KALIMAS WALL





TRANSVERSE SECTION
HOLLAND-PIER



TRANSVERSE SECTION
BENOA QUAY

The Port of Sourabaya—continued.

(h) Electric Power Capacity.—1,450 kilo volt amperes; monthly consumption for power 210,000 K.W.H.; for light 60,000 K.W.H.; there are 25 K.M. of high tension cable.

(i) Street Lighting with 400 electric lamps of 100 standard candles (75 watt).

(j) Government Warehouses managed by the harbour board.

(k) Communication with Sourabaya by electric trams and railway.

Figures of Sourabaya.

The value of the movement of goods in millions of guilders is as follows:—

Year.	Imports.	Exports.	Total.
1900	—	—	135
1911	102	98	200
1913	115	94	209
1914	100	101	201
1915	90	132	222
1916	118	162	280
1917	120	100	220
1918	167	125	292
1919	162	510.63	673
1920	335	505.22	840
1921	328	198.86	527
1922	198	162.56	360
1923	166	240.96	407
1924	184	278.50	462
1925	214	267.92	482
1926	200	211.44	412
1927	196	240.38	437
1928	236	255 45	492

The following table gives a survey of the number of ships which have called at Sourabaya during 1911-1928.

	ARRIVALS.		
Year.	Number.	Steam and Motorships.	Net Capacity. Cubic Metres.
1911	16,710	1,087	6,492,000
1914	12,047	1,227	7,665,000
1918	10,325	1,220	5,489,600
1919	9,356	1,457	7,521,700
1920	7,857	1,494	8,321,000
1921	8,183	1,723	9,844,600
1922	7,538	1,689	9,855,300
1923	7,133	1,695	10,649,200
1924	6,763	1,888	12,387,600
1925	6,208	1,915	13,234,800
1926	5,674	1,905	13,854,500
1927	6,246	2,023	14,767,800
1928	7,241	2,222	17,226,400

Below a survey is given of the cargo traffic of the harbour of Sourabaya.

As much as possible must be left to private initiative. The Harbour Service itself must take only a small part of the quays under its own management, together with the tracts, the sheds and warehouses, lying in back of them, only as many as is necessary to exert an influence on the manipulation of the goods in the harbour to prevent the rates from being raised and to oppose the forming of a trust.

The Harbour Service must keep certain parts as a monopoly for itself, such as the ordinary mechanical equipment of the harbour, water and electricity supply.

With regard to the general course of affairs, it is desirable, that continuity be striven for in the management and daily direction of the Harbour Service and that the harbour and everything connected with it, both administratively and financially shall be in charge of a board of directors under the supervision of the Government and classified under the Department of Civil Public Works.

Chiefly in connection with the lack of experience in the field of harbour management in this country, however, it has not seemed advisable so far to entrust the care of the more important harbours entirely to a board appointed for this purpose. As a temporary measure, therefore, the position of harbour director was successively established in the larger harbours and an advisory committee appointed to furnish this official with information in the interest of the management.

The harbour director (preferably a civil engineer from a technical university) has charge of the construction, upkeep, improvement and extension of the harbour establishment, besides the exploitation of the harbour. Propositions to be presented by him must first be submitted to the opinion of the Harbour Committee and this opinion to be included with the plans. The committee may also on its own account make known its wishes to the Chief of the Department of Civil Public Works or the Government.

The committee is an advisory body. Its composition is not the same in all harbours, but is dependent on local conditions.

Besides the harbour director, who in this capacity acts both as chairman and member, the committee consists of the following members: The harbour master; the chief official of import and export duties and excises; a member appointed by the local council of the district in which the harbour is located, either from the council members or from outside. In the case of a municipality the mayor is often chosen for this purpose; three members to be appointed by the Governor-General of Netherlands India from the commercial and navigation companies associated with the harbour, of whom one as a rule is a representative of ocean navigation, one of coast navigation and one of commerce.

Besides these, in the case of harbours which are in direct connection with the State Railway system, an official of this service automatically becomes a member, while in the case of harbours with private railway connection an official of the railroad or tramway service concerned assumes this position.

CARGO TRAFFIC.

	FREIGHT TONS IN						
Incoming Cargo.	1923	1924	1925	1926	1927	1928	1929 6 Months.
Goods	719,227	737,809	879,646	964,028	951,659	1,098,393	670,483
Coal	191,726	237,731	264,026	279,569	288,999	240,251	156,975
Gasolene	—	—	420	12,055	21,106	9,940	9,266
Fuel Oil	15,289	20,975	56,690	62,997	46,195	26,602	3,298
Petroleum	16,647	44,038	60,822	46,867	48,192	77,232	6,013
Total	942,889	1,040,553	1,261,604	1,365,516	1,356,151	1,452,418	852,035

	FREIGHT TONS IN						
Outgoing Cargo.	1923	1924	1925	1926	1927	1928	1929 6 Months.
Goods	1,025,389	1,151,970	1,338,584	1,120,456	1,291,274	1,572,244	614,214
Molasses	—	—	85,700	77,504	121,616	221,522	169,414
Gasolene	5,400	52,581	18,137	13,730	16,105	87,316	12,805
Petroleum	—	134	90	2,809	20,357	29,478	14,326
Total	1,030,789	1,204,685	1,442,511	1,214,499	1,449,352	1,910,560	810,759
Total Cargo	1,973,678	2,245,238	2,704,115	2,580,015	2,805,503	3,362,978	1,662,794
Coal Supply	10,587	23,797	42,459	28,061	33,115	49,918	33,220
Fuel Oil	22,706	44,050	53,549	57,926	67,924	81,434	42,740
Fresh Water	147,802	140,228	151,037	159,000	177,665	225,441	137,095
	2,154,773	2,453,313	2,951,160	2,825,002	3,084,207	3,719,771	1,875,849

Management.

It is only for the past 20 years, that any special attention has been paid to the management and the working of the harbours.

Experience has proved that as uniform as possible a regulation of the larger harbours must be based on the following principles.

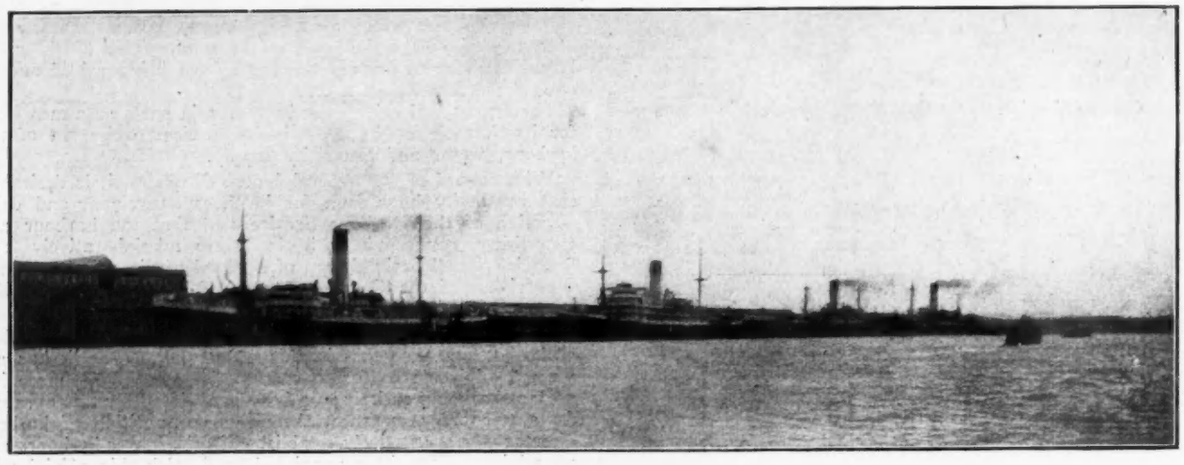
The harbour enterprise must be conducted on a commercial basis on the understanding, however, that no effort shall be made to make any profit over a normal rent.

With regard to the membership of the committee the only requirement is, that they shall be Netherlands citizens; for the rest there is no objection to the existence of business relations with a company or firm of foreign nationality.

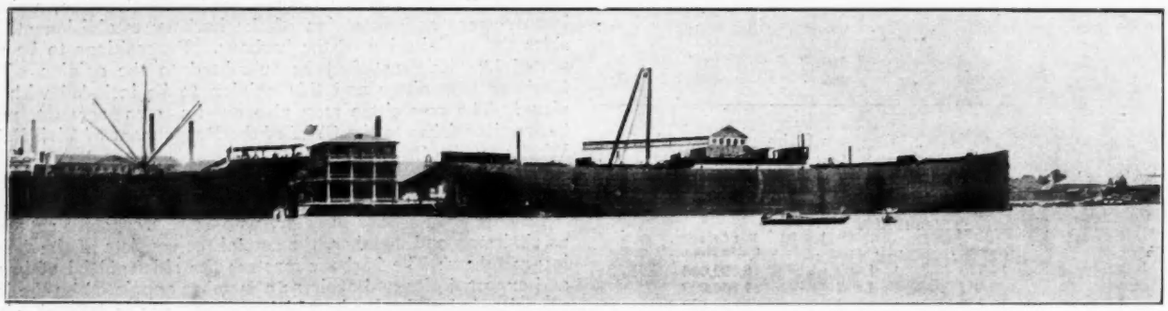
The harbour domain is made up of the harbour tract and the harbour water area.

So far as the use of the grounds is directly influenced by the existence of a harbour, they are considered as belonging to the harbour premises.

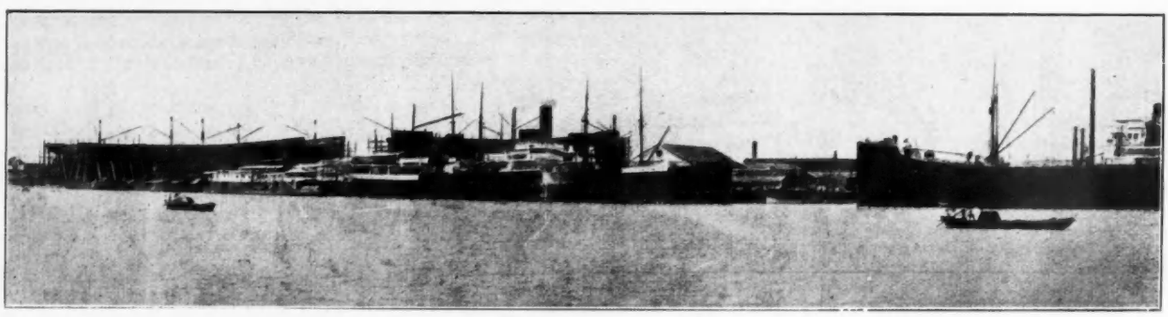
The Port of Shanghai.



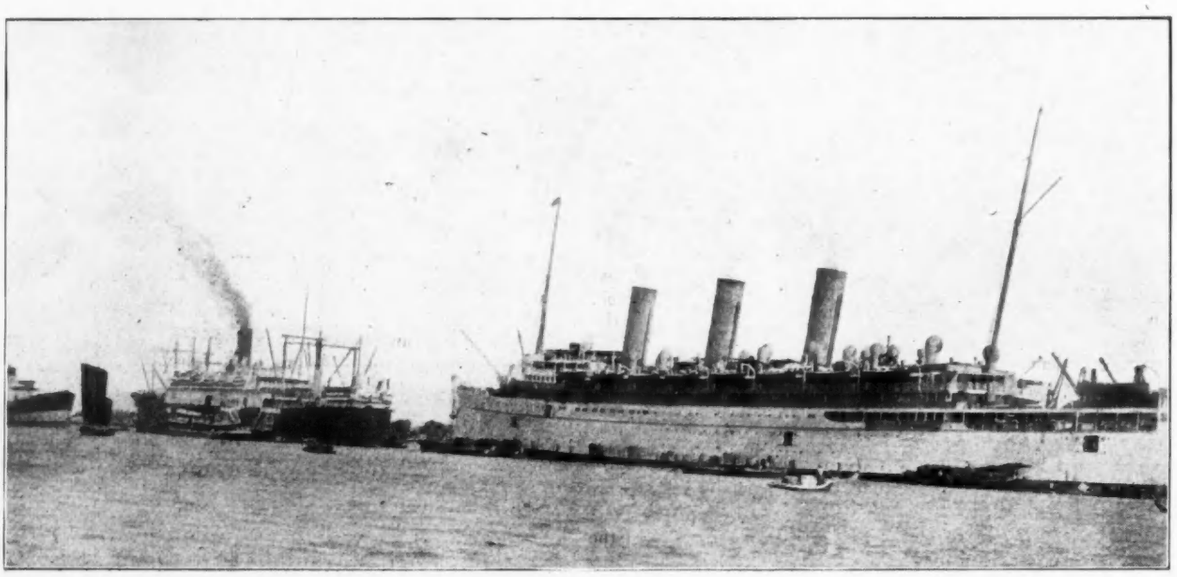
Holt's Wharf.



Kiangnan Dock and Engineering Works (Chinese Government Naval Arsenal).



Kiangnan Dock and Engineering Works (Chinese Government Naval Arsenal).



Lower Moorings.

The Port of Shanghai.

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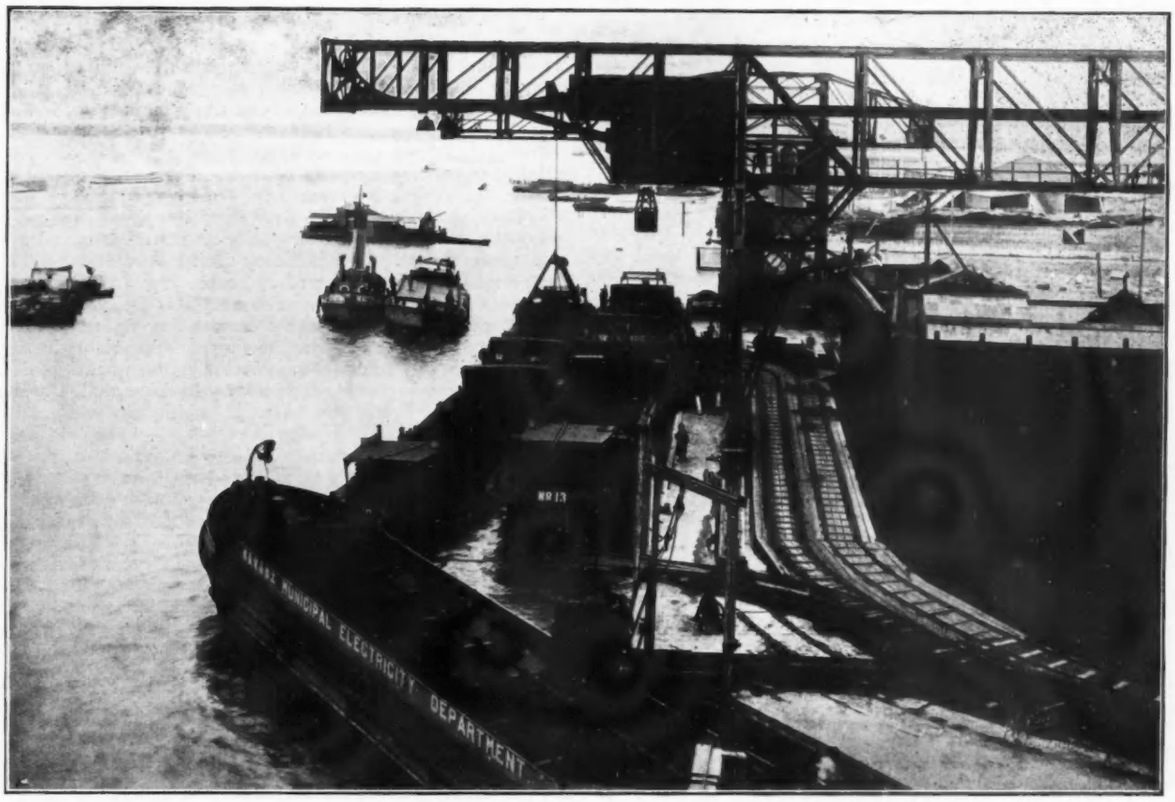


Unloading Coal Lighters at Riverside Power Station.

Energy Supplies in Shanghai.

The industries and shipping of Shanghai depend to a great extent on the fuel supply, which is imported.

All the imported coal is transported some 500 to 800 sea miles, the main sources being (1) Kaiping field, Hopeh (formerly Chihli) via Chinwangtao, (2) Japan, (3) Fushun (Manchuria) via Dalny, (4) Shantung via Tsingtao, (5) Hunan and Kiangsi (Pinghsiang in Kiangsi via Changsha and Hankow), (6) Shansi and Honan, via Kin Han Railway and Hankow, and (7) Tongking (Hongay). All varieties of coal from first-class anthracite to lignite are available.

3,325,800 tons were imported in 1928 as follows:—

1,055,483 or 31.74 per cent. was Japanese.
1,043,321 or 31.37 per cent. was Kaiping.
679,564 or 20.43 per cent. was Manchurian.
261,530 or 7.86 per cent. was Shantung.
285,902 or 8.60 per cent. was classed as various.

Coal contracts for the coming year are usually entered into in October or November. Indian coal is competing in Hongkong with northern Chinese and Japanese, and might be a serious competitor here but that freight and distance are just too great. A first cargo (1,700 tons) has recently been landed from Korea. Japanese coal is used by many local firms. Some mills use northern Chinese, whereas Cardiff is used by all the navies except the U.S.N. who use "Pocahontas" from Pennsylvania, and the I.J.N., who use a special grade of Japanese coal. The mills in Shanghai use 20,000 to 25,000 tons per annum.

There are coal deposits at various localities in south-west Kiangsu, Anhui and Kiangsi, but these are not yet available owing to lack of development and of transport. Moreover, the coal is of doubtful quality and quantity.

At the present time only some of the Yangtze River and coast steamers coal at Shanghai, the ocean steamers carrying enough coal to take them on to Japan (say 1,300 miles from Hongkong via Shanghai). Hongkong itself supplies to ships imported Japanese coal plus a small amount of Hopeh (formerly Chihli) coal and the Welsh coal used for warships. In the event of Shanghai becoming a terminus, ships from Europe would need to coal in Shanghai.

Kerosene and gasolene mostly come from the U.S.A. and the East Indies.

Except at the Riverside Power Station all coal bunkering is by hand from lighters or wharf.

The cost of good steam coal was about H. K. Tls. 12½ per ton in the middle of 1928. Charcoal costs about H. K. Tls. 0.74 per picul or H. K. Tls. 12 per ton. Firewood is about H. K. Tls. 0.40 per picul. Kerosene H.K. Tls. 0.25 per American gallon and gasolene H. K. Tls. 0.38 per American gallon.

There is not much industrial alcohol available at present; 2,788,000 gallons net were imported in 1928, including rectified spirit.

The net imports of coal and coke totalled over two-and-three-quarter million tons net in 1928, originating as follows (gross imports about 4,250,000 tons):—

175,000 Hongay (Tongking)
804,000 Japanese
1,787,000 Chinese
3,000 Others

2,769,000 Tons

Charcoal and firewood were imported to the extent of nearly 2,778,000 piculs in 1928, mostly by junk (1 picul = 133 pounds).

Kerosene—net imports were 26 million American gallons in 1928; 24 millions were of American origin and 2 millions East Indies. There is also a very large transhipment of kerosene.

Benzine and gasolene to a net amount of 7,000,000 American gallons were imported in 1928. (There were nearly 10,500 automobiles in use in 1928 in the Settlements).

"Liquid Fuel" to the extent of 160,000 tons was imported in 1928, but 62,500 was re-exported, presumably for bunkering. The present price is about H. K. Tls. 24 per ton.

Energy Conversion.

The energy conversion plants are five in number, four coal or oil-electricity and one coal-gas.

In the International Settlement the Shanghai Municipal Electricity Department* in 1928 generated 527,779,842 units. The maximum load was 99,000 kilowatts, which rose in January, 1929, to 104,500. Current is generated at 6,600 volts, 3 phase, 50 cycles. It is stepped up to 22,000 volts for transmission purposes, stepped down to 6,600 and 350 volts for power supply and 200 volts for lighting supply. The load factor for 1928 was 61 per cent.

The total consumption of coal in 1928 was 411,888 tons.

*Now the Shanghai Power Co.

The Port of Shanghai—continued.

The recorded consumption in 1928 was as follows:—

45,214,393 units for private lighting and fans	In addition 30,142,041 units were used at the Works.
2,951,262 units for public lighting	
8,381,676 units for heating and cooking	
401,812,884 units for traction and power	
458,360,215 units (K.W. hours) sold.	

At the end of 1928, 8,494 electric motors with aggregate power of 147,074 h.p. were connected with the S.M.C. mains.

The mean sale price per unit was Tls. 0.028 in 1928. The sale prices per unit were Tls. 0.110 and Tls. 0.03 for lighting and heating respectively. Power is sold at specially arranged rates.

In 1928 the French (private) Company for tramways, electric light and water supply had 5 generators totalling 11,000 k.w. The maximum load was 6,850 k.w. The fuel consumption was 6,800 tons of Diesel Oil. Twenty-two million units were sold, of which 814,000 were for public lighting and 450,000 for municipal buildings; 682 motors totalling 3,000 h.p. were connected and 11,069,200 cubic meters of water were pumped. The tariff for current in 1928 was Tls. 0.04 for power and heating and Tls. 0.13 for light per k.w.h.

The Gas Company produced 623 million cubic feet in 1928, of which 568 million cubic feet were sold, and supplied 7 gas engines (191 h.p.), coal consumption 40,000 tons. Price of gas $2.45 per thousand cubic feet. Number of consumers, 10,035. Number of miles of pipes, 160.

The following appliances were fixed in 1928:—

Foreign cookers	4,622
Chinese cookers	814
Grillers and hot plates	2,740
Water heating appliances	1,529

The probable total consumption of coal at the electric stations of the International Settlement and Chinese electric power stations and the Gas Co.'s Works is 550,000 tons, or say 20 per cent. of the total coal import of Shanghai.

IV.—Cargo Movements in the Port.

Volume of Cargo.

In the Chinese Maritime Customs Statistical Series "Shanghai Annual Trade Report and Returns," the total value of the trade (gross and net) of this port is given and also the total shipping (ships entered and cleared in net registered tons) for any one year, and has been given in Section III. The total volume or weight of cargo, imported and exported is, however, not given, but this can be worked out from the detailed tables of the trade returns. This has been done by the Board's staff for the years 1913, 1922, 1923 and 1924. The foreign goods and Chinese goods are separated and so are imports, re-exports and exports. The re-exports thus appear twice, first included in imports and then separately.

The total of the trade volumes are plotted together with the values of the gross trade and tonnage (net reg.) of vessels entered and cleared for 1910-1924. The irregularities of the war-time period have been succeeded by a more steady and parallel development of shipping and trade both in value and weight. While a ton of cargo, as plotted, in 1913 was worth about Tls. 73.00, its value in 1924 was about Tls. 113.00. The ratio between the volume of the trade (volume or weight of cargo) carried in and out of a port by water-carriers and the net registered tonnage of these vessels may conveniently be called its trade-shipping ratio.

This ratio

$$\frac{\text{Tons of cargo, imported and exported}}{\text{Net Reg. tons of vessels, entered and cleared}}$$

indicates the degree in which ships entering and leaving a port are utilised as cargo-carriers. The port is thereby also classified as a terminal or port of call. While trade-shipping ratio for an efficient terminal is around 1, a port of call may have this ratio as low as 1:10 or less. For Shanghai this ratio in 1913 was 1:2.5 and in 1914, 1:3. The tendency evidently is to a greater increase in shipping than in trade volume; a greater number of large ocean vessels are now calling at Shanghai and are not able to get cargo for the port or out of the port to the same extent as in former days. The trade-shipping ratio as given above is of course the average for a whole year. Due to the specific nature of Shanghai as a port, i.e. a port of call for ocean steamers bringing cargo to and from foreign ports and a terminal for coastal and river steamers bringing cargo to and from Chinese ports, the trade-shipping ratio is different for these two classes of vessels. The ratio is much smaller for the ocean vessels (port of call) and approaches one for coastal river steamers (terminal). Taking the average for the whole port Shanghai must be considered as comparatively efficient in this respect.

From the "Shanghai Annual Trade Report and Returns" it is possible to obtain a division of the trade volume into that carried by ocean vessels (cargo imported from and exported to foreign ports) and that carried by coastal and river steamers (cargo imported from and exported to Chinese ports).

Cargo Movements and Efficiency in Cargo Transfer.

The proportion of the trade volume carried by deep-draft vessels and by coastal and river steamers determines the requirements of different water depth along the river front. While the total frontage on both sides of the river within the harbour limits comprises about 108,000-ft. only some 36,000-ft. are developed for shipping and the transfer of cargo. All this wharf-frontage is privately owned and operated, except a few public landings and pontoons on the Shanghai side. Most of the remaining part of the river-front is utilised for industrial purposes, a smaller part for public or private use and a great part undeveloped. The efficiency of the Port of Shanghai can be gauged by the volume of cargo passing over the wharfage per running foot per year. For 1924 this figure was 285 tons per ft. per annum, while the corresponding figure in 1913 was 210 tons per ft. per annum, showing an appreciable increase in efficiency in cargo-handling. Actually the quantity of cargo passing the wharves and pontoons in Shanghai Harbour is much larger. This is due to the peculiarities of the port. The Pootung side of the harbour has no land connection with Shanghai and all cargo for local consumption discharged on Pootung wharves must be delivered to water-craft along the frontage and thereby passes the wharf-front once again. By local consumption is here meant the imports that are not re-exported, i.e., goods for Shanghai and immediate hinterland. All the cargo of this class landed on the Pootung side must be delivered to water carriers:— lighters, cargo boats, etc.

Some of the goods for local consumption unloaded on the Shanghai side are also delivered over the water front and landed either at a public landing near to the consumer or at the destination on the river front or up some of the creeks or waterways. Even import cargo for re-export is often shifted from the wharf where it has been unloaded to another wharf in the harbour where it is going to be reloaded to a coastal or river steamer. The same of course applies to export cargo to some extent but in that case loading usually takes place with the steamer moored at buoys. The cargo has then been assembled in warehouses and only passes the waterfront once. In some cases this also applies to import cargo when the steamer is moored in midstream but the cargo then usually goes to a wharf for storage and delivery. Cargo might also be transferred from one steamer moored in the river to another steamer moored in another section of the harbour. If, however, all the cargo for local consumption unloaded on the Pootung side and part of the cargo of the same destination landed on the Shanghai side is added to the total given, the absolute maximum cargo volume transferred over wharf edge in Shanghai Harbour is obtained. This would give at least 350 tons per ft. per annum as the average for the whole port in the year 1924. This of course includes cargo both ways, i.e., imports and exports including delivery. Shanghai compares in this respect favourably with other ports and the efficiency in cargo-handling is quite good when due consideration is given to the circumstance that very little mechanical equipment is employed for the handling of the cargo.

Cargo Handling Operations and Costs.

Ships load and unload with their own gear. The ships on the Far Eastern run are usually well equipped in this respect, and have to be so on account of the lack of wharf cranes in the ports. There are no cargo cranes suitable for steamers in this port but quite a number of small cranes for loading and unloading lighters and cargo-boats. It is possible to load or unload a cargo steamer working with its own gear in Shanghai Harbour at a rate of up to 1,000 tons a day. Assuming such a steamer of 400-ft. length this will give 2.5 tons per ft. per day or 750 tons per ft. per annum (for 300 working days) as a maximum rate of loading or unloading. This might be called the vertical movement in the cargo transfer and the above figure would be a very good average for any modernly equipped port.

The cargo has, however, to be moved from the wharf-edge for delivery or storage, a horizontal movement. In Shanghai this is usually done by hand and in this respect an appreciable increase in efficiency could be effected. The delivery over wharf-edge (bringing the cargo back to watercraft for distribution) naturally reduces the efficiency of the wharf considerably. Part of the frontage is only provided with pontoons and connecting bridges which does not allow an efficient horizontal movement of the cargo. Modern reinforced concrete wharves are in use and new ones are planned which allow truck service for moving the cargo to and from the wharf-edge. On these new wharves travelling cargo cranes for the use of cargo boats and lighters are also introduced. These cranes are, however, too low to be used for the steamers.

The Port of Shanghai—continued.

With regard to storage facilities there are the usual three kinds available along the wharfage; one-storey sheds near the waterfront, several storied warehouses or godowns at the back and open storage. The transit sheds comprise only about 7 per cent. of the total area of storage and are used in the same capacity as godowns. The total capacity of the godowns and sheds in the harbour area along the waterfront has been estimated at about 3.5 million tons of cargo. In proportion to the trade volume and cargo capacity of the wharves of the port, this godown space must be considered as being large. The special conditions of the local trade are probably such as to require considerable storage facilities.

The way in which cargo is handled in Shanghai Harbour has been briefly outlined before. Steamers usually discharge cargo alongside wharves, while export-cargo often is loaded into steamers moored in the river. There is quite a distinction of the utilisation of the wharves. Coastal or river steamers rarely berth at a deep-draft wharf, this fact naturally causing a considerable interport movement or shifting of cargo by watercraft. The loading and unloading operations are done by stevedoring contractors using the ship's gear for the handling of the cargo. The wharf owners undertake the moving of cargo from wharf to storage including stacking and this work is usually done by contractors, the longshoremen.

The cost of this operation is included in the wharf-charges and usually comprises the complete handling of the cargo on the wharf, i.e., from wharf to storage and back to wharf again for delivery. The delivery of the goods either from wharf or from ship's side or vice versa is undertaken by forwarding agents or lighterage contractors. The cost of the different operations in handling cargo in Shanghai Harbour varies according to the rates for different cargo. The following actual cargo handling costs have been recorded in the year:—

Coal, discharged at Pootung wharves (there is no coal wharf at present on the Shanghai side). Cost of unloading coal, transport on wharf to storage and return to wharf, loading of water craft and delivery within harbour limits: about Tls. 0.80—1.59 per ton depending on the distance to the delivery point.

Wheat in bulk, discharged to watercraft at buoy. Cost of unloading only: Tls. 0.15 per ton. Rate of unloading: 520 tons per day. The cost of unloading in this case was 29 per cent. of total cost of ship's stay in port (Tls. 0.50 per ton of cargo unloaded) not including overhead charges.

Miscellaneous import cargo (paper, steel and general), discharged at wharf,

Cost of unloading	Tls. 0.29 per ton
Wharfage cost (including 10 days' free storage)	Tls 0.85 per ton
Total ...	Tls. 1.14 per ton

being 50 per cent. of the total cost of ship's stay in port. (Tls. 2.26 per ton of cargo discharged) not including ship's overhead charges.

Average rate of discharge: 810 tons per day (1.82 tons per ft. per day)

Export Cargo (China produce), loaded to steamer moored at buoy.

Cost of loading (stevedoring) Tls. 0.85 per ton, being 33.4 per cent. of total cost of ship's stay in port (Tls. 2.55 per ton of cargo loaded) not including ship's overhead charges.

Average rate of loading: 735 tons per day.

Possible Improvements.

The actual cost of handling cargo in this port cannot be considered high, thanks to the cheap labour and the efficient transfer of cargo. Considerable improvements can, however, be obtained in the older wharf-units and new developments can be more radically planned to achieve increased efficiency. In the former category are the pontoon-fronts and timber-decked wharves of which some are in being, and others should be transformed into modern reinforced concrete wharves. This would allow more efficient transfer of cargo in the horizontal movement by the introduction of wharf-trucks in the first instance. The increasing cost of labour must be met by further mechanical equipment on the wharves. New wharf-developments should as a rule be provided with two-storey sheds and several-storied godowns with a canal at the back for direct delivery from godown to watercraft. This would allow a one-way movement of the cargo and would reserve the river front for steamers.

Another improvement both to existing and new wharf-units on the Pootung side would be combined freight and passenger ferry-service across the river. This would allow trucks to reach Pootung and reduce the cargo handling operations to a minimum for goods with a destination in Shanghai proper. The immense growth of Shanghai as evidenced by the statistical information of the volume of cargo given above requires a sound and economical development of its equipment for cargo handling, and the matter needs the careful attention of the private and public interests concerned.

V.—Administration of the Port.

Berthing, Traffic Control and Policing.

The policing of the port within harbour limits is at present under control of the officials of the Maritime Customs, exercised through the Harbour Master. The buoys and lights are similarly under Customs control.

River Improvement and Harbour Works.

The regulation of the Whangpoo and erection of wharves, etc., is controlled by the "Whangpoo Conservancy Board" whose jurisdiction extends between high water lines of ordinary spring tide from Woosung to the tidal limits. Permissions for the construction of wharves, placing jetties and pontoons and riparian reclamation works between the Arsenal and Woosung must be sought through the Harbour Master.

The Board carries out dredging of riparian frontages and reclamations of foreshores by contracts at reasonable rates.

A Bureau of Harbour Works has been formed as a department of the Municipality of Greater Shanghai, to deal with municipal wharves, public ferries and dredging of creeks.

Titles to Riparian Properties.

Chinese land is held under deeds issued by territorial authorities and evidenced by the local bailiff ("Ti-pao"). In the case of foreigners land may be freely purchased from the Chinese owners within the Settlement and French Concession, but approval of the local authorities must be obtained for sites outside these areas. Deeds are issued to foreigners through the Commissioner for Foreign Affairs, which are registered in the foreigner's own consulate. The foreign municipal councils have powers to require compulsory sale of areas scheduled for road purposes. Titles are perpetual leases subject to the payment of a very small land tax.

Sale of Foreshore Lands.

Whangpoo foreshores below the Arsenal lying between the titular boundaries of riparian properties and the "Normal" lines of the river (which are the structural limits for wharves and pontoons) belong to the Government, which, under a supplement to the Conservancy Agreement, has vested same in the Conservancy Board, through whom they can be purchased by the owner of the frontage in accordance with a standard equitable system. This process is termed "shengkoing."

There are some ambiguities as to limits, which are under consideration by the Government.

Public Jetties.

The jetties at the riverward ends of public roads belong to the various municipal authorities. There are also public pontoons on the public quays ("bunds") similarly controlled. In 1925 the extreme congestion at these jetties was the subject of discussion and attempts to segregate the traffic were inaugurated. The municipal "wharfage dues" are sufficient for the maintenance of these.

Public Roads.

The road system adjoining the present harbour is under the administration of various municipal bodies.

1. The Municipal Council of the International Settlement, a purely elective body responsible in accordance with the Land Regulations to the Consular Body of the various nations and the Diplomatic Body in Peking.
2. The Municipal Council of the French Concession, an elective body presided over by the French Consul.
3. The Special Municipality of Greater Shanghai, of which the Mayor is appointed by and is responsible to the Central Government.

Creeks.

The regulation of the various creeks is the business of the Special Municipality. In the lower part of the Soochow creek the harbour master advises as to the locations of bunds and jetties and assists in police control. Dredging is badly needed in all of the creeks, but has only been done to a limited extent in the Soochow and Siccawei creeks.

Railways.

The only two existing railway connections for ocean shipping (i.e., landing pontoons or pile-jetty with railway alongside), at Woosung and at Lunghua, are only for two ships and one ship respectively, and are controlled directly by the Shanghai-Nanking and the Shanghai-Hangchow Railways. The latter is now being appreciably enlarged.

Wharfage.

All the wharfage is privately owned with the exception of the Municipal and Customs pontoons and jetties for passengers and cargo boats.

Lighterage.

There are three large tug and lighter companies and numerous small Chinese lighterage contractors.

Pilotage.

Pilotage is effected by four pilots' associations, of which one is supervised by the harbour master (in accordance with official Pilotage Regulations).

The Port of Shanghai—continued.

Customs Procedure.

The general procedure of the Chinese Maritime Customs is laid down in the Tientsin Treaty of 1858 between China and Great Britain, which includes general regulations, the original import and export tariff and tariff rules. These and Supplementary Treaties made in 1869, 1876, 1901 and 1928 between China and Great Britain and similar treaties between China and other Powers form the basis of the Customs practice.

The principal local official is the Commissioner of Customs, who is assisted in Shanghai by two Commissioners (additional) and by some seven Deputy Commissioners, 52 foreign and Chinese assistants, 183 Chinese clerks, and an appraising staff of some 15 Chinese and foreign assistants, 96 foreign and Chinese appraisers, in addition to a foreign and Chinese staff for preventive duties of 160 men.

The Customs statistics which are the only official harbour records of shipping and trade, are prepared by the Statistical Secretary, whose office is in Shanghai. These are published by the Customs in a " Statistical Series," including daily, quarterly and annual returns of the various ports, and an analysis of the annual figures for the whole of China.

Bonded Warehouses.

Under the Supplementary Convention between Germany and China of 31st March, 1880 (ratified 17th September, 1881), Article III., it is provided that bonded warehouses shall be established at treaty ports, and under the British Commercial Treaty of 1902, Article VI., increased facilities were agreed upon, including the privileges of bonded warehouses to any warehouse which affords security for Customs revenue, subject to regulations made by the Customs.

VI.—Requirements of the Port.

Systemization of Transport.

One of the main problems with which China is faced to-day is to develop a system of transportation, so as to unify, combine, and develop the somewhat haphazard collection of modern transportation utilities with which, together with some of the time-honoured routes, it is now equipped.

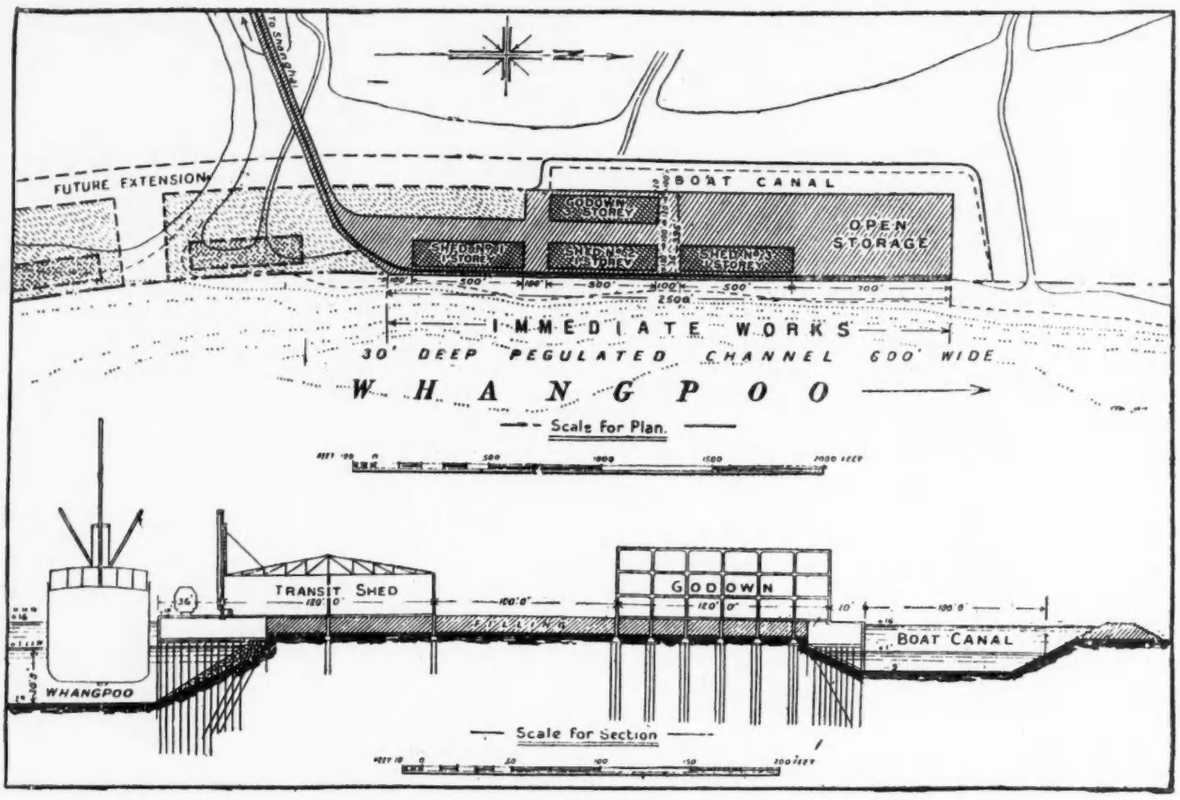
The problem is here, as in all countries, a complex one, involving land routes (road and railways), water routes (ocean and inland) and maybe, in the future, air routes. In China the issue in regard to railways and ports has been obscured by foreign spheres of influence, settlements and concessions, etc., often representing conflicting interests, and the results have not always been for the good of the system as a whole.

Ultimately, the general transportation scheme which will most tend to develop the country and its transportation facilities will also best serve the foreign nations interested in the trade with China. Therefore the sooner the transport problem in China is approached from a rational standpoint as apart from the political one, the better China will be served and the other foreign commercial interests developed.

A main feature of such an efficient transportation system is the concentration on certain main routes and main centres, which are fed from and feed secondary lines and secondary centres, etc., etc.

In Central China's transportation system the main commercial ocean port indicated is the main Yangtze Estuary Port, viz., Shanghai.

A general line of argument on these points is found in the " Report on the Future Development of Shanghai Harbour," issued by the Whangpoo Conservancy Board in 1918.



Commercial Wharf and Dock.

The finding of this report was that the importance of China's trade and Shanghai's position entitles Shanghai to become a first-class port. With the development of Shanghai as such, other ports will grow in proportion—for example, Tientsin, Dairen and Tsingtao, which should be developed each for its own particular hinterland. They have not, however, the unique position and functions that Shanghai has. Hankow is destined to be the main inland port and a great railway centre, but cannot become a main ocean terminal.

The development planned and referred to below is based on the supposition that Shanghai is to remain the main central ocean port of China and will have a chance of becoming—in furtherance of Chinese trade and shipping interests—a world port.

Technical and General Harbour Requirements.

The ultimate aim is that of providing the most economic and productive circulation of goods, but three converging lines of improvement suggest themselves:—

Lowering freight rates by provision of navigational accommodation for ships of the most economic size.

Diminution of handling charges by the provision of such well-organised harbour facilities and wharf equipment that goods can be rapidly loaded and unloaded and the time which the ships stay in port decreased. (This has an indirect effect in reducing freights).

The influencing of routes on land and sea so that the concentration and efficiency favours direct routes, full cargoes and through connections via Shanghai.

The different questions regarding the requirements of the port of Shanghai can be dealt with under two heads: technical and general requirements.

Under the first head, technical requirements, two classes of improvements are needed, viz., with regard to:—

The Port of Shanghai—continued.

(a) Navigational accommodation for receiving the most economic type of ship, which is chiefly a question of draft, but also affects planning and space (viz., depth and width of approaches, roadstead, site, depth and arrangement of the harbour proper and system of moorings and wharfage).

(b) Terminal facilities for unloading and conveying the cargo to the local consumer, or for transhipment either to the railway or to the coast ships or inland water craft of the most economic character. This category includes the question of mechanical equipment of different sizes for unloading, lightering, water communication between the various wharves and industrial waterfronts and communication between the wharves and the railways, and also further wharfage suitable for ships of the largest dimensions which the approaches will permit, the wharves to have direct railway connections.

Under the second head—general requirements—come the questions of administration, Customs control, and reservation of industrial sites. The ideal arrangement would be for the harbour as a whole to be under one harbour authority, whereby the sound development of the port in all respects would be facilitated.

Shanghai Harbour Investigation.

As a result of the above-mentioned Report, issued by the Board in 1918, and with a view to meet the requirements of the commercial and shipping interests in Shanghai, the Whangpoo Conservancy Consultative Board requested the Board to undertake a full and conclusive investigation of all the technical factors and possibilities of improving the South Channel approaches to Shanghai as a first-class port. This investigation was carried out during 1919-1921, including necessary data-collecting, analysing and comparing these facts, as well as studying and preparing all possible technical plans and projects for the development of Shanghai as the premier ocean port of the Central China seaboard and the Yangtze Valley.

Committee of Consulting Engineers.

The result of the Board's investigation was submitted to a committee of consulting engineers composed of harbour specialists from foreign countries, one member nominated by each of the Consultative Board members, representing the leading shipping nations in Shanghai, and the Engineer-in-Chief of the Conservancy Board as ex-officio member. The members of the committee, which met in Shanghai on the 15th October, 1921, were as follows:—

General W. M. Black, U.S. Army, retired, formerly Chief of the Engineering Corps of the United States Army, nominated by member for U.S.A.

Dr. I. Hiroi, Adviser to the Japanese Government on Japanese Ports, nominated by member for Japan.

Mr. P. G. Hornell, C.E., Consulting Harbour Engineer, nominated by member for Chinese General Chamber of Commerce.

Mr. F. Palmer, C.I.E., M.Inst.C.E., Consulting Engineer to Port of London, nominated by member for Great Britain.

Mr. L. Perrier, former Chief Engineer of the Suez Canal and Ingénieur en Chef des Ponts et Chaussées (Paris), nominated by member for France.

Mr. P. J. Ott de Vries, nominated by member for Holland, and

Mr. A. W. H. von Heidenstam, then Engineer-in-Chief, who was selected as Chairman.

The object of the committee was to scrutinise the facts and plans produced by the Board's investigation, as well as any other scheme put forward, and to formulate, on the basis thereof, the best general scheme to develop the port (a) with approaches as they are and (b) for the probable maximum draft on the Pacific.

A committee of local officials studied the matter in 1924 and made certain proposals, but owing to political troubles no results were arrived at. In 1923 a draft of proposed new regulations was submitted by Mr. F. W. Maze, then Commissioner of Customs, to the Military Governor of the Five Provinces. This draft was printed for official use by the Board in 1927.

*VII.—The Whangpoo Conservancy Board and its Work.**

Constitution.

The Board is a special authority created by the Chinese Government. An agreement made between the Chinese Government and the Ministers of the Treaty Powers in Peping (formerly Peking) and formally approved through the Prime Minister on 4th April, 1912, forms the constitution of the Board.

A supplementary article (No. 12) relating to the disposal of Crown foreshore lands was approved by the Ministry of Foreign Affairs with the assent of the Civil Governor of Kiangsu in January, 1916.

The Board therefore derives its authority directly from the Chinese Government.

Members.

The Board consists of three Chinese Government officials:—The Commissioner of Foreign Affairs, the Shanghai Commissioner of Customs, the Shanghai Harbour Master.

Duties.

The duties of the Board are to provide and maintain a deep channel from the Yangtze to Shanghai, to undertake the new works necessary to improve the existing channel and to help riparian owners in dredging in front of their wharves. The Board also undertakes reclaiming and bunding work for riparian owners at reasonable rates and co-operates with the Customs in removing wrecks, marking buoys, sounding, etc.

Funds and Finance.

The Board has entire control of its funds and finance. The Board's income consists of a Conservancy Surtax of 3 per cent. on the Shanghai Maritime Customs dues, 1½ per mille on duty free goods and 0.045 per cent. on treasure, on importation only and the proceeds from the sale of foreshore lands.

Jurisdiction.

The Board's general jurisdiction extends to the tidal limits of the Whangpoo between high water lines. Within these limits it may prevent any operation which would be harmful to the river.

The Board's control of foreshore lands extends from the Kiangnan Arsenal to the Yangtze and between the high water lines of spring tide as they were in the year 1906, but is not fully effective in certain parts of the river owing to ambiguities as to the limits of jurisdiction.

The Consultative Board.

The Consultative Board is a purely advisory body consisting of six members. One of these is appointed by the Chinese Chamber of Commerce and the other five by the five nations having the greatest tonnage entering and clearing at Shanghai.

The Duties of the Consultative Board.

The duties of the Consultative Board are to watch conservancy proceedings on behalf of the commercial interests of Shanghai, Chinese and foreign; to make representations to the Conservancy Board if they think it necessary, and if not satisfied to refer the matter to a Consular Committee for diplomatic settlement through the Ministers.

The Duration of the Board.

No time limit is placed on the Board's activities. The state of the river is such that considerable work will always be necessary to maintain the channel.

History.

The Whangpoo Conservancy Board is the successor to the Whangpoo River Conservancy, which was established in 1905 by agreement between the Chinese Government and the Treaty Powers.

Under the 1905 agreement, China agreed to make a grant and to choose an engineer well versed in the question of riverine work, and accordingly appointed Mr. J. de Rijke. This gentleman had reported on the river both in 1876 and 1898 to the Shanghai General Chamber of Commerce, and upon his appointment proceeded to carry out scheme " B " of his 1898 report.

At that time (1905), when the work was commenced, the bar at the mouth of the river (Woosung Outer Bar) had a depth of only 15-ft. at the time of extraordinarily low tides. Three miles up, the river divided into two channels, one very shallow of 8-ft. depth and only suitable for junk traffic, and the other (the " Old Ship Channel ") with a bar (Woosung Inner Bar), having a depth of only 10 or 11-ft. at lowest low water. From the upper end of the island between these two channels up to the International Settlement the channel was wide, with shoals rising at several points. In the harbour itself the deep channel was too narrow; in two places the whole river was too narrow; and there was a bar commencing to rise at Wayside.

All these defects were becoming worse, so that it is certain that, unless regulation work had been undertaken, by this time Shanghai would have become inaccesible to large ships, and as it is cheaper to carry goods in large ships than small ones, either the big ships would have gone to other ports or they would have had to unload into boats in the Yangtze. Whichever was done, the cost would have been greater and Shanghai would have suffered severe loss, and probably mostly from the diversion of business to other places.

After the Outer Bar had been deepened by the construction of a massive training wall at the left of the entrance, and the Inner

*A Chinese version of this section was published in February, 1924. Some small revisions and additions have been made here.

The Port of Shanghai—continued.

Bar had been eliminated by the diversion of the river from the Old Ship Channel to the more direct Junk Channel (Astraea Channel), the through channel depth improved from 11-ft. at lowest low water to about 19-ft.

The success and soundness of Mr. de Rijke's project were fully attested in a report made in July, 1910, by Sir John Wolfe Barry, Sir William Matthews and Mr. A. G. Lyster at the request of the Shanghai-General Chamber of Commerce.

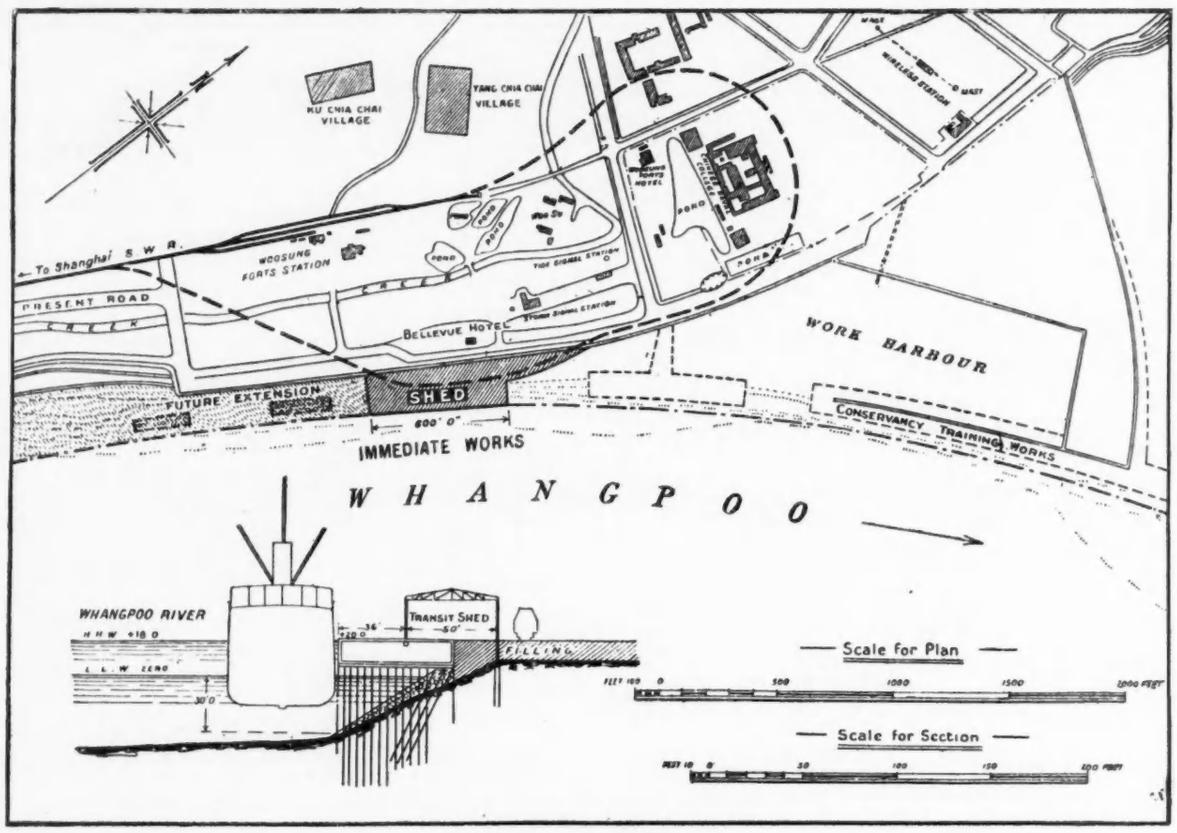
The immediate improvement in water depths on the inner and outer bars were directly due to the able plan conceived by Mr. de Rijke, and the further improvements which developed later were the logical development of his scheme.

The important works, which formed the most essential part of Mr. de Rijke's project, had cost over seven million taels, and this expenditure, together with interest, practically exhausted the grant of the 1905 agreement. Owing to the financial position the Civil Governor of Kiangsu abolished the Whangpoo River Conservancy in 1910 and set up a Maintenance Board. Mr. de Rijke left at this time. Mr. von Heidenstam was appointed in his place and remained associated with the work until 1928. In 1912 the present Whangpoo Conservancy Board was established.

ultimate limits to which the pier heads, wharves and pontoons may be constructed and are the ultimate legal limits to which a riparian owner may acquire land title. To guide the water between those lines, training walls have been built in many places, of various types, with piles, brushwood-mattresses, caissons, stone, etc., and where the channel was split by islands or shoals, one of the two branches—the so-called Ship Channel—was closed by heavy dams, and the other made into a first-class waterway. In two places the river was too narrow and was widened to the normal width by dredging; 33,700,000 cubic yards of mud have been dredged. Very large areas have been reclaimed by thus narrowing the whole channel, with the result that the deep channel is wider and the tidal currents run unimpeded from the Yangtze through the smooth gently curving course. At the points where the land bulges out into the water the mud continues, however, to settle, and at these places some 1,000,000 cubic yards have to be dredged each year.

Results up to Date.

Thus the river has been converted from an irregular and rapidly deteriorating creek into a good shipway with a least



Mail Steamer Wharf.

Mr. H. von Heidenstam proved an able successor to Mr. de Rijke, and his broad ideas led to a steady improvement of the depths and navigability, and to a clear perception of the immense future which Shanghai should have. After seeing a good 26-ft. channel realised and having awakened the interest of all in the necessity for a real progressive harbour policy, he resigned in 1928 and was succeeded by Dr. H. Chatley, who had been for many years his assistant.

The reason for the new Board being formed was that the Whangpoo Regulation, as a whole, was only half complete, and that there were no funds for continuation and for the general future maintenance. As the only obvious source of income was a tax on trade and the merchants were unwilling to submit to such tax unless they had some representation and guarantee how the money would be handled, the present Agreement of 1912 was made. No money has been paid by the Central Government to the Board since 1911.

Conservancy Work.

The improvement of a tidal river like the Whangpoo follows certain simple principles. To obtain a deep regular channel suitable for navigation the width between the low water lines must be almost uniform, slightly expanding towards the mouth. The Conservancy therefore laid down in 1906 " Normal Lines " within which the channel must be kept. These lines are about 1,400-ft. apart at the upper end of the harbour, expanding to about 2,400-ft. apart at the mouth. These lines show the

navigable depth of 26-ft. at extraordinarily low water, except at the Wayside Bar, which has only 24-ft. in the middle of the fairway.

As the neap tide rises at least 6-ft., a through high water depth of at least 32-ft. is available every day of the year.

The following table shows the improvements artificially produced in the various obstructions:—

Least Navigable Depths on Shallowest Bars in the Whangpoo.

	Outer Bar at Woosung	Inner Bar above Woosung	Junk or Astraea Channel	Wayside Bar
1906	ft.	ft.	ft.	ft.
Commencement of first Board ...	15	10	8	21
1912				
Commencement of present Board	21	(abolished)	19	22
1929	30½	—	28	26

The Board's Organisation and Assets.

All the works of the present Board have been paid for out of income. A Dredging Department is organised, with a first-class dredging fleet consisting of:—

Two large and one small bucket ladder dredgers; three large and one small grab dredgers; ten large tugs, two small tugs and 23 steel mud barges; several auxiliary craft; mechanical workshop and repair yard and power plant for same; dry dock.

The Port of Shanghai—continued.

A well-equipped Construction Department, which deals with training work of all kinds, bundings, reclamations, wharves, etc., has been developed with:—

Two large mud pumps for reclamation; floating cranes and pile-drivers; tugs and pontoons; diving equipment.

A fully developed Hydrographic Department has been established, with tide gauge houses, etc., as well as a general Survey Department which keeps continuous watch over the river, publishes maps, etc. The Board also own considerable areas of reclaimed land. This land will be available in the future for the provision of public wharves, etc., etc.

Board's Financial Position.

At the end of 1928 the Board's assets in plant (not including Conservancy works and land) were valued at Tls. 1,261,390. The income for the year 1928 from the Conservancy tax was Tls. 1,258,950.

Staff.

In 1928 the Board's staff consisted of 729 Chinese (not including casual labour, which varies greatly) and 18 foreign employees. The latter are all experts, each in his particular line. Their number was reduced to 12 in 1929.

Publication and Records.

The Board publishes at short intervals charts and maps of the river, the Engineer-in-Chief's and other reports on work done, etc. The Board's archives include a large mass of data on the Whangpoo and the Yangtze, and also much information as to conservancy operations throughout China.

Present Aim and Work Programme of Conservancy Works.

The Board is now operating on the second of two ten-year work programmes drawn up by the late Engineer-in-Chief.

The first of these was drawn up in 1911 and adopted in May, 1912. Its object was an improvement of the through depth in the channel from 19 to 24-ft. The estimated cost was 6 million taels (spread over the ten years). The projected results were achieved by the end of 1921 at a cost of less than 5½ million taels, and at the same time assets (including dredging plant, workyard, etc.) were increased by a value of some Tls. 550,000.

The second ten-year work programme was adopted as from January 1st, 1922. The object is to develop the river in regard to depth and space as far as possible with the funds available, but the programme was subject to modifications consequent upon the anticipated future adoption of the recommendations made in 1921 by the Committee of Consulting Engineers as to the general development of Shanghai Harbour.

The Board is now thoroughly well equipped to carry out all its duties under the present Conservancy agreement and even to undertake some extra dredging work, and is proceeding steadily with the second work programme.

Shanghai Harbour Investigation.

The growth of ships makes a depth in the Whangpoo, which 18 years ago was thought sufficient, still too little; even the present depth of 26-ft. is too small. The approach to the Whangpoo in the Yangtze has, however, become important. The depths on the Yangtze Bar, only 18-ft at low water, cause great delays and are much less than those now obtaining in the Whangpoo. For this reason, from 1914 onwards, the Board had been studying the approaches to Shanghai outside the Whangpoo and the probable greater future needs of shipping, till in 1919 it instituted a special Harbour Investigation, and prepared alternative schemes of harbour improvement.

This work culminated in 1921 in the convening of a committee of harbour and river experts of the first rank, who made definite proposals as to future programme and the necessary organisation. Their detailed report recommended the improvement of depths on the Yangtze Bar, and the provision of public harbour facilities, public docks, wharves and moorings, etc., supplementing the existing accommodation. Although the cost of this investigation was great, the Board believe that the results obtained justified the expense. These proposed works are required in order further to develop Shanghai as a first-class port, a development which will not only benefit Shanghai, but also the neighbouring provinces and China as a whole.

The engineers' report was submitted to the Government at the end of 1921.

Moorings.

For many years it has been the custom for certain ships entering the Whangpoo to moor in midstream, and some of the shipping companies, as well as the navies of some foreign nations, put down private buoys. Some of these berths were arranged for head and stern moorings, while others permitted swinging with the tide. As the volume of shipping developed and ships became larger it became apparent that the possible berthing spaces were not used economically, that the number of buoys was insufficient, that the buoys were not placed so as best to suit navigation, that the swinging of ships with the tide caused obstruction, and that unified control was necessary.

The 1905 Conservancy Agreement (Art. VI.) stipulates that "The Taotai and the Commissioner of Customs of Shanghai have the right to expropriate the existing fixed moorings and to establish a system of public moorings in the river," but this was never put into force.

The Maritime Customs (Harbour Department), which has always controlled the placing of mooring buoys, put down some additional moorings for general use, and the harbour master (Capt. H. G. Myhre) in 1920 advocated the laying of similar moorings at Woosung. In 1921 the whole question of moorings was referred to the Committee of Consulting Engineers for the Shanghai Harbour Investigation, and they recommended that "the existing river moorings be acquired and added to as required."

In February, 1924, the harbour master (Capt. H. E. Hillman, R.N.) suggested that "in the near future the Conservancy Board, in consultation with the Harbour Authority, carefully consider the whole question, draw up plans and estimates for the improvement of berthing accommodation."

In March, 1925, the China Homeward Freight Conference discussed with the Pilots' Association and the harbour master (Capt. A. Hotson) the need for a proper swinging berth in No. 9 Section. The Pilots' Association put forward a scheme drafted by one of their members, Capt. S. P. Jorgensen, for rearranging the whole mooring system so as to leave a wider channel, abolish swinging moorings and provide additional berths.

The proposal was discussed by the various authorities concerned and by the Shanghai General Chamber of Commerce, and thereupon a general scheme was developed by the Customs Harbour Office, in consultation with the Whangpoo Conservancy, following the general lines proposed by Capt. Jorgensen, but with certain alterations and additions.

In December, 1925, a conference was convened by the harbour master (Capt. Hotson) of the following gentlemen:—

Mr. F. E. H. Groenman, representing the Consular Body; Mr. F. W. Maze, Commissioner of Customs; Capt. Hillman, Coast Inspector; Mr. N. S. Brown, representing the General Chamber of Commerce; Mr. Yu Ya Ching and Mr. Zee Ko Seng, representing the Chinese Chamber of Commerce; Capt. H. von. Heidenstam, representing the Whangpoo Conservancy Board; Mr. Ch'en Ping Heng, representing the Junk Guilds; Capt. Jorgensen, representing the Shanghai Licensed Pilots' Association; Mr. Fu Siao En, and Capt. Chang Pei Ying, representing the China Merchants S.N. Co.; Mr. Chang Yen Chung, representing the Hung An Steamship Co.

After considerable discussion the following resolution was passed unanimously:—

"The meeting feels that the time has come for the rearrangement of mooring accommodation in the entire harbour of Shanghai so as to alleviate the present congestion in the navigating channels and crossings, and to that end this meeting strongly advocates representation to the Chinese Maritime Customs of a scheme to be worked out, both as to arrangement and finance, by the Harbour Authority. This meeting further urges the advisability of the expropriation of all the present privately owned buoys; and their operation by the Chinese Maritime Customs until the new Harbour Board, proposed by the Committee of Consulting Engineers and recommended to the Chinese Government by the Whangpoo Conservancy Board, is created; and that no further private buoys should be laid in future.

"The members of the Chinese Chamber of Commerce, present at this meeting, further suggest that in the rearrangement of the harbour the question of naval moorings shall be considered."

Representations were duly made to the Commissioner of Customs in this sense, and the execution of the scheme was authorised by the Inspector General early in 1926. Mooring chains were ordered from abroad and buoys and anchors were made in local shipyards. Laying, lifting and relaying of the moorings was carried out by local shipyards and the Construction Department of the Whangpoo Conservancy Board, commencing in October, 1926.

The moorings are divided into three classes—"A," "B" and "C." Each buoy of the "A" class moorings (of which four are supplied) is held in position by four 7-ton anchors, with 3-in. ground chain, each of the four legs 45 fathoms in length. Pendants are of 3½-in. stud-link chain and bridles of 3¼-in. stud-link chain. These moorings are for vessels not exceeding 650-ft. in length. Each new "B" class buoy is held in position by four 5-ton anchors, with ground chain of 2½-in. stud-link chain, pendants of 3-in. stud-link chain, and bridles of 2½-in. stud-link chain. These moorings are used for vessels not exceeding 500-ft. in length. Four of them are laid. Each "C" class buoy is held in position by one sinker, sunk 16-ft. below the bed of the river, with an attached 3-in. chain of a length sufficient to reach to above low water level of ordinary spring tides. To

The Port of Shanghai—continued.

this is shackled a pendant of 2½-in. stud-link chain, 16-ft. in length. These moorings are used for vessels not exceeding 350-ft. in length. Twenty-two are laid.

Segregation of Inflammables.

The Committee of Consulting Engineers, Shanghai Harbour Investigation, 1921, was specially requested to express an opinion as to the desirability of segregating future oil storage and definitely pronounced in favour of such segregation. In 1922 the Board decided that the reclamations at Upper Gough in the bed of Old Ship Channel were suitable, and in 1924 the Civil Governor of Kiangsu authorised their use for this purpose, under the administration of the Maritime Customs. Owing to the obstruction by certain parties claiming to possess titles to parts of this area and difficulties in the investigation of these claims by the territorial authorities, the site has not yet become available for the purpose.

In view of the long delay, permission has been given to private parties to develop oil storage near to the Board's reclamations.

Ports Wholly or Partially Tributary to Shanghai.

Owing to its development and favourable position, Shanghai serves as a transhipment point for the water-borne foreign trade of almost the whole of China. The only important exceptions to this statement are the coast ports of the extreme south and, in a partial sense, those of the extreme north, which are served by Hongkong and partly by Japan respectively.

It is useful to consider the ports in three categories: Northern, Central, Southern.

The Northern Ports are as follows: Antung, Dalny (Dairen), Newchwang, Chinwangtao, Tientsin, Lungkao, Chefoo, Tsingtau (Kiaochow).

These serve an immense hinterland extending far back into Mongolia and Manchuria. The principal products are furs, wool, beans, wheat and coal. Except for Dairen, they are about 50 per cent. tributary to Shanghai, the remainder of the cargo being served directly by foreign ports, especially Japanese.

The Central Ports include the whole Yangtze group, fed by an immense rice growing area, and the coast ports of the Chekiang and Fukien provinces (Ningpo, Wenchow, Foochow and Amoy). Silk, tea, timber and coal are important exports.

The Southern Ports are wholly in the Kwangtung province; Swatow, Canton, Kiungchow (in Hainan) and Pakhoi, and in normal times are served from Hongkong. During 1925 a certain amount of the trade of these ports was done through Shanghai. Their hinterland is semi-tropical and the exports are tea, silk, rice, timber, fruit, etc.

Northern Ports.

Antung, on the Yalu River, at the boundary between Manchuria and Korea, serves an appreciable part of Manchuria, especially the water-borne trade coming down the river. It has good railway connections. The anchorage is a long way from the bund.

Dalny, (Dairen) in the Liaotung peninsula, is the most highly developed port in the North of China, having over 12,000-ft. of wharf with good berthing depths. It is the principal terminal for the South Manchuria Railway and draws from the whole of Manchuria. Its trade is mainly direct with Japan.

Newchwang, on the Liao River, is accessible to vessels of about 18-ft. draft and does a considerable local business, exporting beans, hard cereals, salt and skins.

Chinwangtao is a private harbour constructed and operated by the Kailan Mining Administration for the export of coal. There are about 20 berths with good depths.

Tientsin is on the Haiho, and early in 1929 was barely accessible to coasting steamers owing to the silting of the river. Such vessels discharged into lighters at Tongku, inside the Taku Bar at the entrance to the river, which bar remained navigable. This condition has arisen only in 1927, and in the latter part of 1929 the previous state, allowing 17-ft. drafts to enter at suitable tides, was restored.

Tientsin is the main point for the concentration of the trade of Chihli province, and is well served by railways and canals.

All the above ports, except Chinwangtao, are seriously affected by ice in the winter, but Dalny and Tientsin are partially relieved by ice-breakers.

Lungkao is as yet of small importance.

Chefoo is on the northern shore of the Shantung peninsula. It has an artificially protected harbour.

Tsingtao (Kiaochow) is a good natural harbour and has well-built deep-draft wharves. It is connected by rail with Tsinanfu, the capital of Shantung, and in addition to the general trade of that province exports considerable quantities of locally mined coal.

Direct Foreign Trade of Northern Ports, 1928.
(Millions of H. K. Taels)

	Imports.	Exports.	Total.
Antung	44.5	42.2	86.7
Dairen	117.0	188.4	305.4
Newchwang	17.6	7.8	25.4
Chinwangtao	6.3	6.6	12.9
Tientsin	112.6	82.0	194.6
Lungkao	0.2	2.7	2.9
Chefoo	3.9	5.3	9.2
Kiaochow	37.3	26.3	63.6
	339.4	361.3	700.7

An unknown fraction of this is actually transhipped in Shanghai, but there are numerous direct sailings between most of these ports and foreign ports, especially Japanese.

Central Ports.

All the Treaty Ports on the Yangtze River are accessible by the same present sea approaches as Shanghai.

(1) Woosung, at the mouth of the Whangpoo, has no trade of its own and its chief importance is that of an outer harbour and anchorage. All cargo is taken to Shanghai by the ships themselves or by lighters. Woosung may already be regarded as a suburb of Shanghai, and will in time be part of its outer and industrial section. It was opened by Imperial Decree in 1898.

(2) Chinkiang, on the right bank (161 miles above Woosung), is accessible to vessels of 23-ft. draft continuously and 30-ft. draft during the summer. At the junction of the Grand Canal, it forms an important entrepôt for Kiangsu province, but the silting of the harbour and the proximity to Shanghai threaten its future.

(3) Nanking, on the right bank (208 miles above Woosung), with Pukow on the left bank. It is accessible to vessels of 24-ft. draft continuously and 30-ft. draft during the summer and is politically important. Pukow is the terminal of railway to N. China and is provided with wharves. Nanking has hulk pontoons connected to shore. A project has recently been formulated to provide Nanking with 37,000 lineal feet of wharf by means of piers and slips between the railway yards at Hsia Kwan and the San Cha river. One-storied godowns and a car float service across the river are intended. The hope has been expressed that by this development in conjunction with trunk line railway towards Canton, Nanking may become a world port.

(4) Wuhu, on the right bank (260 miles above Woosung), is accessible to vessels of 16-ft. draft; there may be as much as 24-ft. through depth to it even in winter, but the shoals are very variable; there is a depth of 30-ft. during the summer. It is the entrepôt for Anhui province, with good canal connections to large rice-growing areas. Vessels unload there into hulks, whence goods go by cargo boats to the shore, but there are now some pontoons connected to the shore.

(5) Kiukiang, on the right bank (457 miles above Woosung), is accessible to vessels of 12-ft. draft continuously and 30-ft. draft during the summer. It is the entrepôt for the Kiangsi province, with good water connections. Vessels discharge into hulks as at Wuhu.

(6) Hankow, on the left bank (602 miles above Woosung), is accessible to vessels of 8-ft. draft continuously and 30-ft. draft during the summer. Very important entrepôt for upper Yangtze and the provinces of Hunan and Hupeh. Rail connection with Peking and Changsha (with extension to Canton under slow construction). Steamers unload at pontoon jetties.

All these ports have some " direct " ocean trade, especially Hankow, which obtains over 50 per cent. of its foreign imports (totalling 78 million Customs Taels in 1928) " direct," the remainder being " re-exported " at Shanghai. In actual fact some of the " direct " trade is transhipped on " passes " at Shanghai, but is not included in the Customs returns of that port, and pays no duty or conservancy or wharf dues there.

About 50 per cent. of Shanghai's foreign imports are re-exported up the Yangtze, 20 per cent. to ports below Hankow, 17 per cent. to Hankow and 13 per cent. to ports above Hankow. (Yochow, Changsha, Shasi, Ichang, Wanhsien and Chungking).

Hankow competes to some extent with Shanghai in the direct commerce with Japan and the China Coast because the largest drafts of ships plying between China ports can reach Hankow in the summer, and economy can be effected on coal, wages and overhead from mileage saved and by absence of transhipment charges and delay of cargo in Shanghai.

On the other hand, if transhipment occurs at Shanghai economies can be effected by use of larger vessels on the ocean at all seasons, fuller cargoes, higher speeds between ports outside and also higher speeds in river owing to the purely river steamers having less draft, and more rapid " turn-round " owing to better wharf facilities.

With the partial exception of Pukow it seems probable that most foreign trade from these river ports will always tend to be transhipped in an estuary port (i.e., Shanghai).

The Port of Shanghai—continued.

Yangtze ports of call: Nantunghsien (formerly Tungchow), Tatung, Anking, Wusueh, and Lukikow.

Direct Foreign Trade of Yangtze Ports, 1928.
(Millions of H. K. Taels).

	Imports.	Exports.	Total.
Chungking	0.80	0.90	1.70
Wanhsien	0.02	0.03	0.05
Ichang	1.20	—	1.20
Shasi	0.07	—	0.07
Changsha	0.36	0.01	0.37
Yochow	1.30	—	1.30
Hankow	50.41	27.76	78.17
Kiukiang	2.55	0.13	2.68
Wuhu	2.79	1.01	3.80
Nanking	1.05	2.80	3.85
Chinkiang	5.74	0.03	5.77
	66.29	32.67	98.96

With the exception of a large fraction of the Hankow trade, most of this is transhipped at Shanghai.

Other central ports served by Shanghai are Ningpo, Wenchow, Foochow and Amoy. The inland " treaty ports " of Hangchow and Soochow are tributary to Shanghai, but the connection of Shanghai with them is only by canal and railway.

Ningpo and Wenchow are coastal ports which concentrate the business of the Chekiang province. Ningpo is accessible to steamers of 18-ft. draft.

Foochow and Amoy similarly serve the Fukien province and are similarly mostly frequented only by coasting steamers. At Foochow the anchorage is a considerable distance from the city, which is only accessible in junks, launches and small steamers. An improvement scheme for the river between the anchorage and the city is under execution.

Direct Foreign Trade of Central China Ports other than Yangtze Ports, 1928.
(Millions of H. K. Taels).

	Imports.	Exports.	Total.
Soochow	0.09	0.02	0.11
Hangchow	0.07	—	0.07
Ningpo	5.96	0.03	5.99
Wenchow	0.08	0.33	0.41
Santuao	0.25	0 01	0.26
Foochow	7.26	14.86	22 12
Amoy	16.92	3.70	20.62
	30.63	18.95	49.58

Southern Ports.

The treaty port of Canton dominates the trade of the Kwangtung province, and Swatow is also of importance, but neither are accessible to deep-draft shipping.

The port of Hongkong, which is a British Crown Colony, bears a peculiar relation to the South of China. In virtue of its accessibility to deep-draft shipping and its being in fact a free port, it functions as a concentration point and much cargo for Shanghai ex southern ports is transhipped there. Such cargo does not, however, include goods to be re-exported from Shanghai to foreign ports, but only goods for local use at Shanghai and a certain proportion of re-export from Shanghai to Chinese ports.

The " direct foreign trade " of Swatow and Canton totalled over Tls. 155 millions in 1928, but under normal conditions none of this will be transhipped at Shanghai.

Belfast Port Affairs.

THE members of the Belfast Harbour Board spent a very interesting and instructive day on the 1st July, when they took part in the annual inspection of the port and its many-sided activities. The programme included tours by land and water and gave the members the best possible idea of the developments that took place during the previous year.

The Commissioners assembled at the Harbour Office, where they were joined by Mr. M. J. Watkins, the General Manager and Secretary and other officials. Immediately afterwards the Chairman, Mr. R. E. Herdman, D.L., and his colleagues took the salute from 50 members of the Harbour Police, who paraded in the courtyard under Major Armstrong, Supt. The men presented an exceedingly smart appearance.

Mr. Herdman complimented Major Armstrong and his men on their high standard of police efficiency. The condition of the harbour estate, and its freedom from crime of every kind, was a tribute to their oversight and zeal. Mr. Herdman recalled the fact that when her Grace the Duchess of Abercorn, wife of the Governor of Northern Ireland, visited the harbour on a recent occasion, she took a special opportunity of expressing her admiration for the police on duty and for the efficient and satisfactory way they had carried out the duties pertaining to the ceremony on that occasion. The Commissioners concurred in the opinion of her Grace and felt they had every reason to be proud of the officers and men who constituted their police force.

Later the Commissioners inspected the Pilots ashore. The men, who were under Captain McIntyre, the Harbour Master, looked very fit and efficient, and were cordially congratulated by the Chairman on their contribution to the safe passage of vessels entering and leaving the port.

The next item on the programme was a visit to the recently organised workshops on the estate. These were the scene of great activity with the furnaces blazing, machinery in full revolution, hammers banging on the anvils, and skilled hands all keenly interested in the pursuit of their various occupations.

In answer to several questions Mr. Chamberlain, the engineer, said that all the equipment of the port was kept in first-class order at the workshops. If anything went wrong with a buoy, or with a gantry, or with any one of the hundred and one things forming the paraphernalia of the undertaking, it was immediately grappled with and rectified without delay by the modern appliances with which the workshops were furnished.

Members of the Board were obviously keenly interested in the various operations going on and were able the better to realise the immense advantage the workshops are in maintaining the uninterrupted efficiency of the whole of the vast undertaking controlled by the Commissioners.

The members of the Board afterwards went on to the steamer " Musgrave " and proceeded to the Spencer and Dufferin docks, where they inspected the quays and sheds, as well as the improvements carried out during the past few months to facilitate the traders of Ulster who do business with the Board.

The next visit was to the new dock on the County Antrim side of the river, where considerable headway has been made. The dock, when completed, will be a big step in the forward march which has marked the history of the port and will be of far-reaching significance from the point of view of industry and commerce.

The Commissioners subsequently crossed the river and had a look at the Thompson wharf, where the new 150 tons hammer-head crane is situated, adding a new importance to the many facilities provided in connection with shipping.

Later there was an inspection of the new dredging plant at the entrance to the channel, where also was viewed the vast reclamation works which are still being carried out in this area. This is the ground which has been set apart for the proposed new aerodrome, and in the opinion of aviation experts could not be improved upon, owing to its acreage, its proximity to the city and to the water.

At lunch on board the " Musgrave " the health of the Chairman was honoured with the heartiest enthusiasm, and the Commissioners afterwards proceeded down the Lough to inspect the buoys, the outer lighthouse, the pilot cutter and the out-sea pilots.

While cruising in the Lough the time-honoured tradition was observed and the statutory meeting of the Board was held, a pleasant departure from the more prosaic surroundings of the board room.

The Harbour Master's return showed that 290 vessels arrived at the port between the 15th and the 28th June as follows:—Coastwise and cross-channel, 249; Foreign, 27; Non-trading, 14. The total tonnage of vessels using the port from the 1st January to the 28th June was:—Coastwise and cross-channel, 1,307,428, an increase of 124,500 over the same period last year; Foreign, 312,883, an increase of 22,958; Non-trading, 65,392, an increase of 17,213. Total: 1,685,703, an increase of 164,671.

The Chairman said it was most gratifying to hear such a return, indicating as it did an increase in every department of shipping.

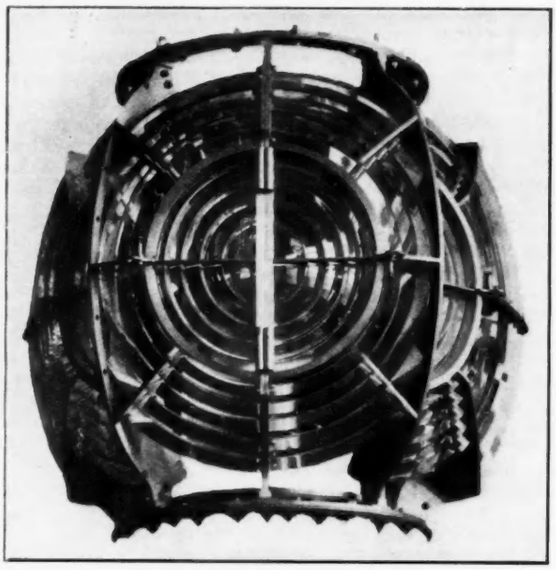
New Passenger Ship for New Zealand to be Built.

Messrs. Vickers-Armstrongs inform us that they have received an order from Lord Inchcape for an important passenger ship for the Union Steamship Company of New Zealand. The ship will be built at Barrow-in-Furness and the main propelling turbo-electric unit will be supplied by the British Thompson Houston Co. at Rugby in collaboration with Vickers-Armstrongs Limited.

A New Type of Dioptric Apparatus for Lightships.

Multi-phase Optic.

THIS apparatus has recently been built by Messrs. Chance Brothers and Co., Ltd., the well-known marine and aerial lighthouse manufacturers of Smethwick, Birmingham, England, to the requirements of Mr. J. P. Bowen, engineer-in-chief to the Trinity House, the patentee of the apparatus, who intends it primarily to act as a standby for various lightships which are provided with dioptric apparatus.



Lightships naturally have optics giving different flashing characters or phases, and by the use of a multi-phase optic it will be feasible to replace on its station, permanently or temporarily, a lightship that is fitted with a dioptric apparatus. At the present time lightships with dioptric apparatus, owing to the fixed nature of their characteristics, have to be replaced by spare lightships which have illuminating apparatus consisting of silver-plated parabolic reflectors with oil or petroleum vapour burners, and necessitate a multiplicity of illuminating sources. The silver-plated parabolic reflectors are carried on a plate fitted to the carriage which revolves them, and their disposition or grouping is arranged to suit the existing character of the light required by means of holes drilled in the before-mentioned plate. This is a cumbersome arrangement obviated by the use of a dioptric apparatus which requires only one pendulum support. The nature of this invention is a dioptric apparatus that can be changed at will by simply assembling the different panels in the desired position so that it will show:—

1. A single flashing character.
2. A double flashing character.
3. A triple flashing character.
4. A quadruple flashing character.
5. Alternate single flashes, red and white.

This is done by constructing the apparatus with interchangeable panels consisting of 4 panels as A, 2 as B, 2 as C and 2 as D—10 in all.

The single flashing light is arranged as shown in Fig. 1. When it is desired to convert a single flashing character to a double flashing, the faces A^2 B^2 D^2 and A^4 B^4 D^4 are taken down, turned upside down and replaced in the position shown in Fig. 2.

To convert to a triple flashing character as depicted in photograph, panel C^1 remains in position, the other panels are taken down and panels D^2, C^3 and B^4 are turned upside down and replaced in the position shown in Fig. 3, screens being fitted in place of panels A^1 A^2 A^3 A^4.

To convert to a quadruple flashing character, panel C^1 remains in position, the other panels are taken down and panels C^3B^4 and A^4 are turned upside down and replaced in position as shown in Fig. 4, screens being fitted in place of panels A^1 A^3 D^2 and D^4.

To convert to a red and white flashing light, panels D^2 B^2 D^4 and B^4 remain in position, panels C^3 A^1 C^1 and A^3 are turned upside down and replaced in position as shown in Fig. 5, ruby shades being fitted as indicated.

Thus the apparatus retains the power of interchangeability of the old reflector lights, with the greatly increased intensity of the dioptric apparatus.

Lloyd's Register Shipbuilding Returns for the Quarter ended 30th June, 1930.

FROM the statistics issued by Lloyd's Register of Shipping regarding vessels under construction at the end of June, it is noted that in Great Britain and Ireland there is a decrease of 222,930 tons in the work in hand as compared with the figures for last March, and that the present total—1,392,063 tons—is 61,843 tons less than the tonnage which was being built at the end of June, 1929.

About 58,000 tons of the tonnage now in hand in this country are intended for the British Dominions; about 292,000 tons for Norway; and about 232,000 tons are for other foreign shipowners or for sale.

The tonnage now under construction abroad—1,665,672 tons—is 14,736 tons greater than the work which was in hand at the end of March, 1930, and is the highest since 1921.

Five countries abroad have more than 150,000 tons under construction, viz.: United States, 238,163 tons; Germany, 237,468 tons; Holland, 187,445 tons; France, 186,960 tons, and Russia, 156,621 tons.

The total tonnage under construction in the world amounts to 3,057,735 tons, of which 45.5 per cent. is building in Great Britain and Ireland, and 54.5 per cent. abroad. The average percentages in the last twelve months before the war were 57.2 for Great Britain and Ireland and 42.8 for abroad.

In Great Britain and Ireland 230,466 tons were commenced—a decline of about 196,000 tons from the similar figures for the March quarter; and 468,023 tons were launched—an increase of about 123,000 tons. Similar figures for abroad are 350,425 tons commenced, and 418,853 tons launched.

A large increase as compared with the previous quarter is again shown in the tanker tonnage under construction, the present figures being 148 vessels of 1,110,056 tons, of which 84 vessels of 633,577 tons are being built in Great Britain and Ireland, and 16 vessels of 142,845 tons in Germany. It is significant that of the 148 tankers under construction, 131 are motorships.

The tanker tonnage now building represents over 36.5 per cent. of the total steam and motor tonnage under construction in the world, and is the highest on record.

As was the case at the end of March, the tonnage of motorships now under construction in Great Britain and Ireland exceeds that of steamers building, the present figures being 831,159 tons and 556,804 tons respectively. The motorship tonnage being constructed abroad (1,089,346 tons) is more than 94 per cent. greater than the tonnage of steamers.

The continued progress in the employment of the internal combustion engine for the larger vessels is indicated by the fact that while there are now being built in the world 91 motorships each of 8,000 tons and upwards, only 30 steamers of such size are under construction. These figures include 10 motorships and 11 steamers each of 15,000 tons and upwards.

The table respecting marine engines shows that the horse-power of steam engines now being built or being fitted on board amounts to about 980,000 horse-power, while the figures for oil engines aggregate about 1,430,000 horse-power. The figures for steam engines include 53 sets of turbine engines of about 554,260 shaft horse-power, giving an average of nearly 10,500 horse-power per set.

Tonnage to Lloyd's Register Class.—The pre-eminent position which Lloyd's Register retains amongst the Classification Societies of the world is demonstrated by the fact that the tonnage actually under construction throughout the world under the inspection of Lloyd's Register reaches 1,977,628 tons, of which 1,176,030 tons are being built in Great Britain and Ireland.

A New Type of Dioptric Apparatus for Lightships.

Multi-phase Optic.

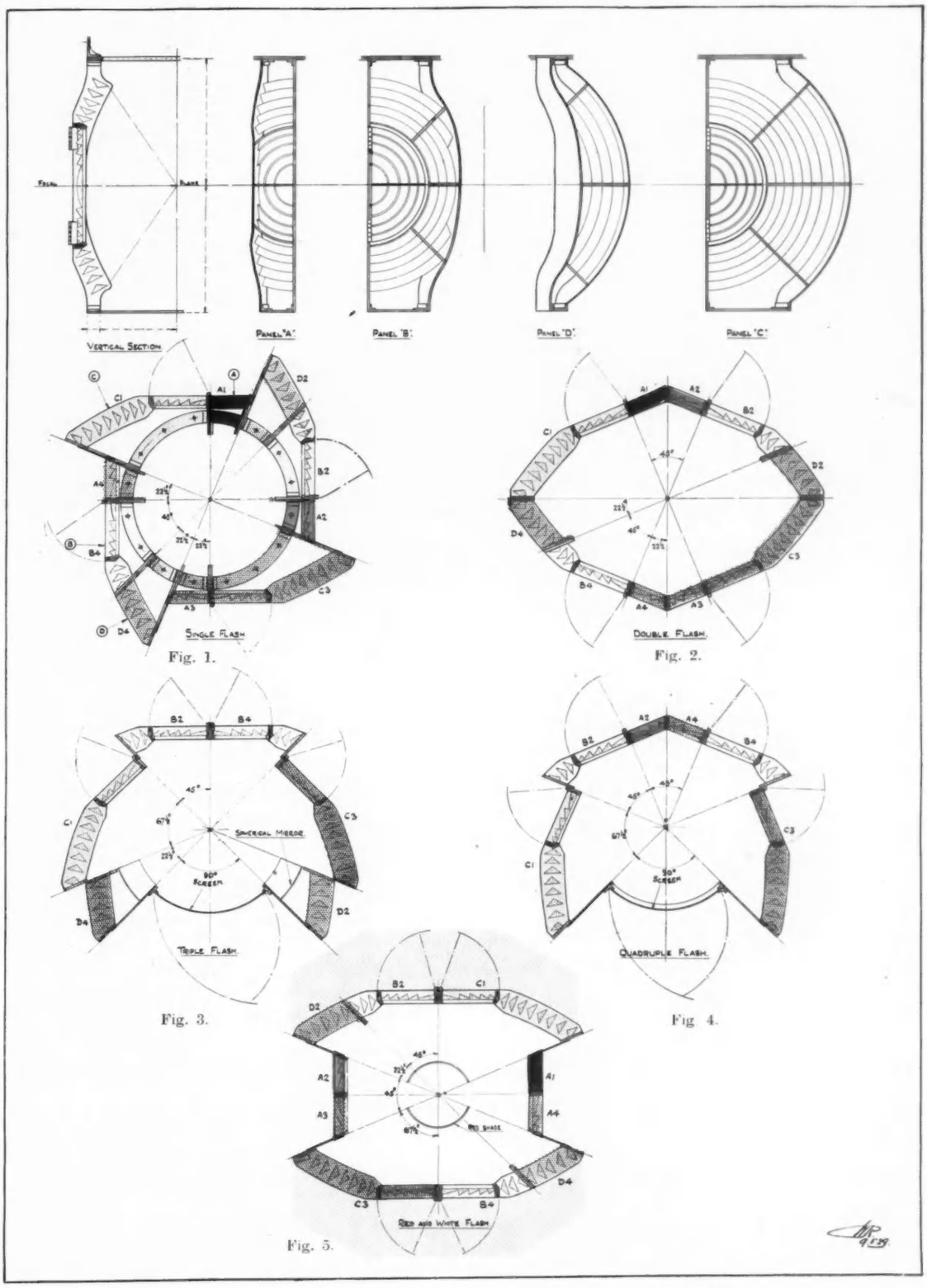


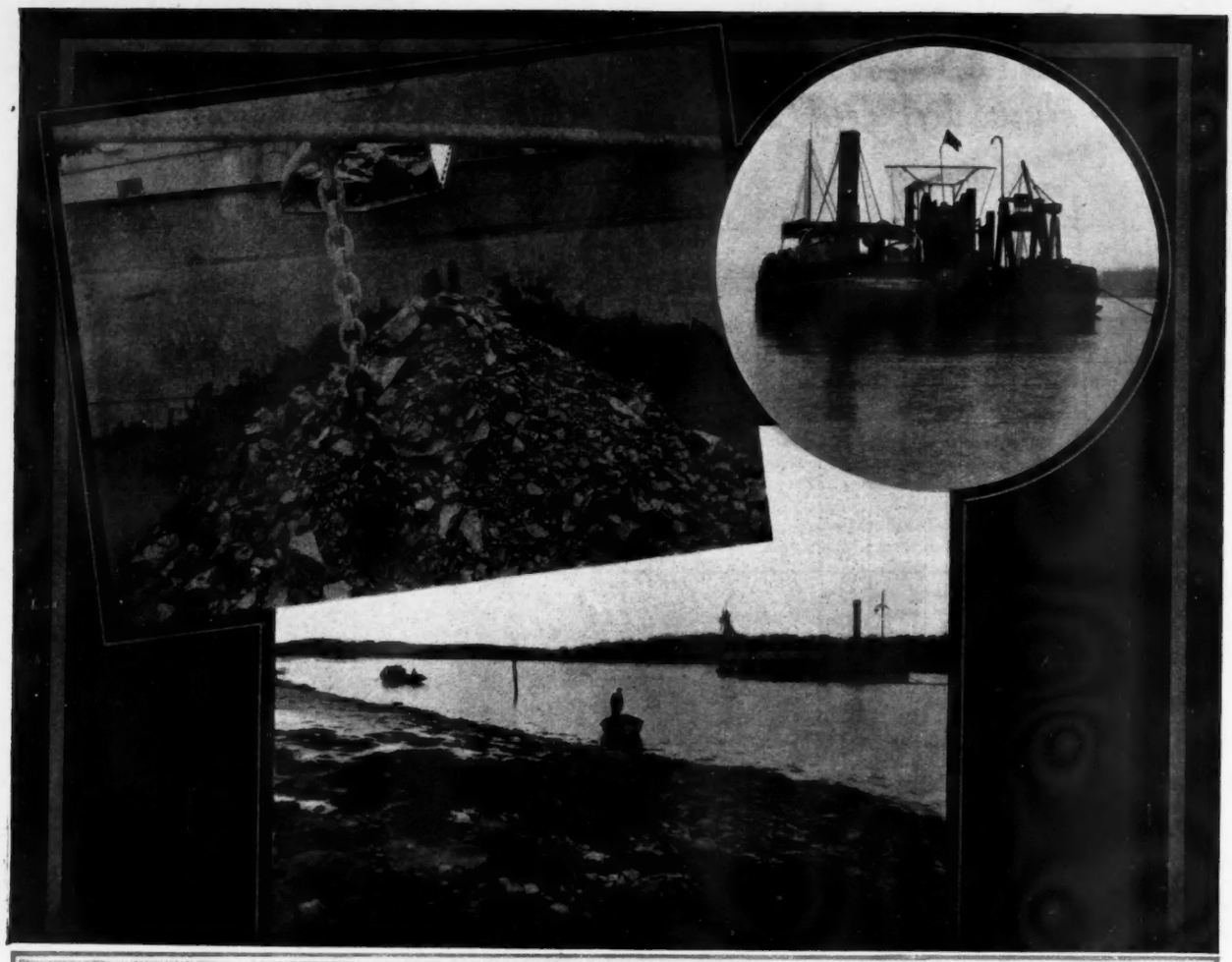
Fig. 1.

Fig. 2.

Fig. 3.

Fig 4.

Fig. 5.



A Recent Contract at

WATERFORD PORT AND HARBOUR

IRISH FREE STATE

Waterford lies some miles from the sea up the River Suir, and the Commissioners for improving the Port and Harbour of Waterford recently decided to carry out improvements in the channel some three miles below the City by widening and deepening, underwater rock-breaking and dredging being involved. The Contract was awarded to Tilbury Contracting & Dredging Co., Ltd., and powerful rock breaking and dredging plant was employed. The photographs give an indication of the type of plant engaged upon the contract, and also of the granite which had to be broken and dredged. Tilbury Contracting & Dredging Co., Ltd. have been for many years specialists in underwater rockbreaking, and have carried out a number of important contracts of this nature.

ESTD T.C.&D.C.L. 1884

Tilbury Contracting & Dredging Co Ltd

Queen Anne's Chambers
Tothill Street
Westminster
S.W.1.

KOUKOKUSHA NI OTEGAMI ONSASHIDASHI NO SAIWA DOZO "DOCK AND HARBOUR AUTHORITY" NITE GORAN NO MUNE ONKAKISOE NEGAIMASU.

Irish Harbour Matters.

The Cork Motor Packet "Innesfallen."

WHEN the City of Cork Steam Packet Company's new motor vessel "Innesfallen," built at Belfast, recently arrived at her berth in Cork, she had on board as one of her passengers Mr. R. Wallace, Chairman of the Cork Harbour Commissioners. This vessel, whose speed will shorten the journey between Cork and Fishguard by a couple of hours, is claimed to be the largest cross-channel packet that has yet used the port of Cork regularly. A vessel of 3,600 tons, she has a speed of 18 knots and actually did 20 on her trip from Belfast to Cork.

Butt Bridge, Dublin.

To replace the existing structure known as Butt Bridge, the Dublin Port and Docks Board propose to erect a bridge of the cantilever design. Plans for this and also for a transporter bridge further to the eastward have been lodged with the Department of Local Government, which has expressed approval of the designs, plans and estimates for Butt Bridge. The question of a temporary footbridge is being deferred for further consideration by the Department of Local Government.

The Chairman of the Dublin Port and Docks Board, Mr. C. E. McGloughlin, states that the bridge would be thoroughly rebuilt and that the plans and specifications will be out for tender by the end of July, after which work will be begun as soon as possible. The commencement will, to a certain extent, depend on the preparation of O'Connell Bridge to relieve the traffic while Butt Bridge is closed. He has himself given a personal undertaking that no effort will be spared to have the bridge finished for the Eucharistic Congress in 1932.

Waterford Port Improvements.

The Directors of the Tilbury Contracting and Dredging Company recently made a tour of Waterford Harbour, where they are carrying out extensive improvements. The directors were Major-General Sealy, D.S.O., Mr. Butler Jones, and Captain Hughes, managing director. By invitation they were accompanied by the following members of the Harbour Board: Mr. M. Cassin, Chairman; Mr. J. V. Spencer, Vice-Chairman; Councillor E. Walsh, Mayor of Waterford; Messrs. W. Hill, W. B. Merry, J. V. Nolan, M. S. Breen, J. Aylward, W. E. Jacob, and J. Peterson. Officials of the Board present were: Messrs. Austin A. Farrell, Secretary and General Manager; Captain Farrell, Harbour Master, and Mr. W. E. Friel, C.E. Engineer.

Captain Hughes, on behalf of the Tilbury Contracting Co., said they had the plant necessary for any dredging work and would gladly go into any project submitted to them from the Irish Free State. Their present work in Waterford would be completed within the next few months and he hoped that the Commissioners would be able to further improve the magnificent port of Waterford when the present work was finished.

General Sealy said that Waterford Port was a fine one and was capable of still greater development. If the management of Waterford Port was a specimen of the management generally of the Irish Free State, then he had not the slightest doubt that there was a great future in store both for the City of Waterford and the whole of the country.

Mr. M. Cassin, on behalf of the Commissioners, said that the works which they had carried out, and those which were now in course of completion, would allow steamers of deeper draft to enter the port and so bring increased trade to the city.

Dredging at 2d. a Ton.

Cork Harbour Commissioners, on the motion of their Chairman, Mr. R. Wallace, passed the following resolution:—"(a) That the tender of Messrs. Fleming and Ferguson, Ltd., for shore pumping plant for the 'Loughmahon,' for the sum of £3,138, viz., Sand pump and gear, including chain drive, £850; 500-ft. of floating pipe with pontoons and gear for same, £2,288—£3,138—be accepted under the Common Seal of the Commissioners. (b) And that an additional sum, estimated at £800, be authorised for expenditure on the erection of said plant on the 'Loughmahon'."

With this plant, the Chairman said that the "Loughmahon" would dredge, pump and deposit at the same time at a distance of 400 to 500-ft. If they had had that plant ten years ago when they started the Tivoli Scheme it would have been nearly complete by now. The Engineer expected with it to put aside something like a thousand tons of mud at a cost of twopence per ton. The plant would pay for itself within twelve months.

Mr. Dixon, who seconded, said that the plant was wanted badly, so as to get on with Tivoli and also to deepen the channel, which was at present 16-ft. It was time to deepen it to at least 20-ft.

Messrs. Doyle and Home, who retired by rotation from the Pilotage Committee, Cork Harbour Commissioners, have been reappointed to their positions.

Examples of Modern Shipbuilding.

A vessel which probably exemplifies the trend of future developments in marine propulsion loaded a cargo of steel sheets for Canada at the Great Western Railway Newport Docks between the 21st and 23rd July.

This vessel, the "Cement Karrier," recently built at Middlesbrough for the Canada Cement Company of Montreal, is designed solely for the conveyance of cement in bulk on the Canadian lakes, and her construction incorporates the most modern ideas and inventions for dealing with this class of traffic.

In appearance the vessel is somewhat similar to an oil-tanker with a suggestion of the submarine. The engines, which are Diesel electric, are situated aft, and the bridge, upon which, of course, is the wheel and control house, is forward.

The vessel's holds, as is of course very necessary in a craft destined to carry bulk cement, are perfectly water-tight, the hatch-covers on a normal type of cargo steamer being substituted on this ship by steel plates, which are screwed down after the cargo has been loaded.

Two tunnels run practically the whole length of the ship, into which the bulk cement is allowed to fall. These tunnels are fitted with "scrapers," which push the cement forward into containers, from which it is discharged through pipes by compressed air. Thus the cost of packing the cement in bags, casks, or drums as is usual in this country, is entirely eliminated, as also is the cost of provision of labour, etc., to discharge the cargo.

The ship is actually driven by the master from the bridge, where an appliance similar in appearance to an ordinary ship's telegraph provides the connecting link between the electrical plant and the movements of the vessel. Everything aboard is driven by electricity and is directly controlled from the bridge.

The electrical equipment of the ship was entirely installed by the General Electric Company, which firm it is interesting to note are at present equipping a new passenger liner of 22,000 tons with somewhat similar engines. Instead of being Diesel electric, however, as in the "Cement Karrier," these will be turbine electric.

Motor Vessel "Cement Karrier" at Newport Docks.

The cargo of steel sheets loaded at Newport under the agency of Messrs. George Stevenson and Company totalled approximately 1,200 tons.

The Port of London Authority.

Retirement of Well-known Port of London Official.

AFTER 46 years in the service of London's Port, Mr. G. S. Maskall, O.B.E., has retired from the position of Dock and Warehouse Manager to the Port of London Authority.

He entered the service of the East and West India Dock Company in 1884, and was always associated in the main with the shipping side of that Company's activities; upon the formation of the Port of London Authority he was appointed (in 1909) their Shipping Superintendent, becoming Assistant Dock and Warehouse Manager in 1916, and four years later taking control of the Department.

Through something life half a century's close contact with ships and shipping, Mr. Maskall has witnessed many and striking changes as to types of vessel and shipping customs, facilities provided, and accommodation offered. In his earlier days sail was still largely in use and steamers of 6,000 tons were considered large. The docks of London everywhere presented the sight of sailing ships with cut-away bows, striking figure-heads and cat-heads with their bowsprite extending over dock walls and across London streets; seamen were engaged bending or unbending sail in full view of the passer-by. To-day the sailer in the docks of London is a rarity and 6,000-ton steamers have given way to 20,000-tonners, with the newest oil-burners and motor-vessels plentifully in evidence.

Mr. Maskall was closely connected with transport arrangements at the time of the Boer War in 1899-1902; and, of course, during the great war.

In the war years Mr. Maskall paid official visits to French and Belgian ports on behalf of the Government in connection with facilities for handling war stores and munitions. On the second occasion he visited Bruges, Ostend, and Zeebrugge, when arrangements were necessary for the removal of the American base from West Coast ports nearer to the war zone. Happily the plans contemplated were not found necessary, as, soon after the arrival of the mission, the Germans evacuated Ostend, Bruges and Zeebrugge.

He also served on the Port and Transit Executive Committee which did such valuable work in the relief of Home Port congestion during the great war. Mr. Maskall was a member of the East and West Coast Diversion Traffic Committee under the chairmanship of Lord St. Davids, and devoted much time in connection with various Government Committees, such as the Sugar Commission, the Wheat Commission, the Ministry of Food. His wide knowledge was of high value in consideration of the best course to be followed at times when it was essential that various commodities should be husbanded to meet the needs of the civilian population. Many points in regard to the embarkation of troops and munitions were dealt with by Mr. Maskall in collaboration with the Admiralty and the War Office; for these services Mr. Maskall was awarded the O.B.E.

Probably no man in the Port of London has a greater knowledge or a closer acquaintance with the progress of shipping and transport facilities connected therewith than has Mr. Maskall. Naturally, one with so prolonged and so intimate an experience has gained a host of friends in shipping and commercial circles, and Mr. Maskall enters upon a well-earned retirement with the sincerest good wishes for his happiness, in token of which his brother officers recently presented him, at a dinner in his honour at the Metropole Hotel, with an extremely handsome silver cigar box.

It is understood that it is Mr. Maskall's intention to travel and see many of those places all over the world with which he has been in active contact, though separated by distance, throughout his life.

The Port of London Authority have appointed Mr. M. G. Matthews, O.B.E., to be their dock and warehouse manager in succession to Mr. G. S. Maskall. Mr. Matthews has for some years served in the capacity of assistant dock and warehouse manager.

London's Shipping.

During the week ended 4th July, 1,256 vessels, representing 1,050,156 net registered tons, used the Port of London. Of these 657 vessels (861,248 net registered tons) were to or from colonial and foreign ports and 599 vessels (188,908 net registered tons) were engaged in coastwise trade.

Eight vessels with meat cargoes entered the Port during the week, three from Australia and New Zealand, the "Port Sydney," "Tairoa" and "Ruahine," and five from South America, the "Avela Star," "Highland Monarch," "Tuscan Star," "Celtic Star" and "Highland Rover." Together they brought 334,216 carcases of lamb and mutton, 105,000 carcases of beef, a quantity of pork, and nearly 29,000 packages of sundries.

During the week ended 11th July, 1,354 vessels, representing 1,055,951 net registered tons, used the Port of London. Of these, 633 vessels (832,736 net registered tons) were to and from colonial and foreign ports and 721 vessels (223,215 net registered tons) were engaged in the coastwise trade.

Five vessels arrived in the Port during the week with meat cargoes; three from Australia and New Zealand, the "Orsova," "Mataroa" and "Taranaki," and two from South America, the "Hardwick Grange" and "Afric Star." Together they brought 163,615 carcases of lamb and mutton, 81,969 quarters of beef, quantities of pork and rabbits and nearly 25,000 packages of sundries.

During the week ended July 18th, 965 vessels, representing 960,918 net registered tons, used the Port of London. Of these, 603 vessels (807,403 net registered tons) were to and from Colonial and foreign ports and 362 vessels (153,515 net registered tons) were engaged in the coastwise trade.

Seven vessels arrived in the port during the week with meat cargoes. Four were from Australia and New Zealand, the "Themistocles," "Maloja," "Coptic" and "Largs Bay," and three from South America, the "Almeda Star," "Highland Chieftain" and "Saxon Star." Together they brought about 350,000 carcases lamb and mutton, 81,000 quarters beef, and 29,500 packages of sundries.

London's Imports.

The principal increases in the tonnage of imports into London during May this year compared with May, 1929, were as under:—

	1929 Tons	1930 Tons
Vegetables	61,164	83,294
Iron and Steel	32,598	43,353
Meat	57,929	88,459
Millboards, Wood Pulp, etc. ...	72,189	78,022
Paper	29,027	33,979
Wood, Hard and Soft	113,479	173,356
India Rubber (excluding Pontianac) . .	8,579	10,657

The following were the principal decreases:—

	1929 Tons	1930 Tons
Coffee	4,296	2,859
Fruit (Dried)	12,141	7,259
Oil (excluding Petroleum)	34,783	27,096
Tobacco and Cigars	2,788	1,611
Wines	3,984	2,775
Wool	21,909	19,400

More Passenger Activity at London.

More vessels and passengers used the Tilbury Passenger Landing Stage last week than during any similar period since the Stage was opened last May. The vessels aggregated over 100,000 gross tons and about 2,250 passengers were embarked or disembarked. Two of the largest vessels were the s.s. "Minnewaska" (Atlantic Transport Line), outward bound for America, and the Orient liner "Otranto," en route for Australia.

The increasing use made of the passenger facilities provided by the Port Authority is regarded as highly satisfactory.

London Imports more than Next Five Largest Ports Combined

Preliminary figures obtained from the Board of Trade show that the total value of the overseas trade of the United Kingdom, imports and exports, during 1929 was £2,059,816,450, an increase of £20,355,704 over 1928. The Port of London's share of this trade was £705,237,524, or over 34 per cent. of the whole. London's proportion of the increased traffic over 1928 was equal to £12,500,000, or 61 per cent. of the national increase in trade.

Imports were responsible for the increase and amounted to £1,220,765,300 for the whole country. London's share was £480,155,455. This total is £14,107,773 greater than in 1928 and is considerably greater than the combined import traffic handled by the next five largest ports in the Kingdom, viz., Liverpool, Hull, Manchester, Southampton and Glasgow, the grand total for these ports being £445,835,051. Thus the import trade of London was more than double that of Liverpool, six times that of Hull, seven times that of Manchester, eleven times that of Southampton, and sixteen times that of Glasgow.

These figures have a bearing on the recent announcement by the Port of London Authority that owing to increased traffic and more economical working arrangements, dock dues on vessels and port rates on goods are to be reduced as from September 1st next. Mr. L. C. Harris, presiding at the annual meeting of the General Shipowners' Society, referred to the Port of London as "the most efficient port in the world."

Scottish Harbour Notes.

Dundee Harbour Trustees.

THERE has just been celebrated the centenary of the Act which vested the control of Dundee Harbour in trustees. In honour of the occasion an illustrated booklet was issued giving a comprehensive account of the harbour's history and detailed accounts of the modern additions to the port. The historical record was the work of Mr. J. Hannay Thompson (general manager and engineer) and facsimiles of old prints threw light upon the picturesque aspects of the early wharves and docks, each of which was described in a copiously illustrated chapter. A special section dealt with Tay Ferries; another with pilotage; and a third with statistics. Mr. George G. Ritchie (Clerk to the Harbour Trust) lent valuable assistance in the preparation of the charts and diagrams. The arrangement and the formation of this centenary book was pleasing, and the fine map inside the cover gave an excellent idea of the port as it exists to-day.

King George Wharf, Dundee.

It may be added that the most notable addition to the Dundee Harbour within recent years is the splendid King George Wharf which provides facilities for shipping unrivalled on the East Coast of Scotland. This was begun in the year 1914 and 900-ft. of wharf are now available to be reinforced shortly by a 500-ft. extension. This wharf is equipped with six travelling cranes capable of lifting weights up to three or five tons, and it is possible that others may be constructed. The cranes are superseding the old hydraulic jiggers which have been used for jute discharge since the year 1882. Dundee now stands chief of the non-coal exporting ports of Scotland, and has shipping connections to all parts of the world. The Indian trade is shared by four liner companies and there are two direct services to the United States—besides one to Canada. Other companies provide weekly or fortnightly sailings to and from Hamburg, Rotterdam, Antwerp and Dunkirk, Gothenburg, Riga, Tallin, Norwegian ports, and various other centres. There are also two coastwise shipping companies which ship goods from Dundee to liners bound for every corner of the earth.

Increase in Clyde Trust Revenue.

A satisfactory increase in the revenue of the Clyde Trust for the year ended June last is reported. For this particular period the total revenue amounted to £1,012,736, but a fair comparison of the revenue of last year with the preceding one cannot, however, be made, owing to the coming into force on August last of the new Rating Act and in October last of the de-rating rebates. It is estimated that on the standard year the reduction in dues granted by the Rating Act will amount to £55,000 and by the de-rating rebates to £81,000—a total of £136,000—and if the estimated proportions of these reductions granted during the past year, for the periods during which they were in force, be added back to the revenue of that year, this will make it £1,111,984 as against £1,059,497 for the year ended June, 1929, or an increase of £52,487. To the extent therefore indicated by the sum of £52,487 the trade of the Port of Glasgow was better during the past year. The annual inspection of the harbour and works in progress has been fixed for Tuesday, September 9th.

Inverness Harbour Trust Meeting.

At a recently held meeting of the Inverness Harbour Trust it was reported that the collections at the local harbour for the past thirty-eight weeks were £2,845 as compared with £2,777 for the previous year: being an increase of £68. At the same meeting there was submitted a letter from the Scottish Office which stated that, in regard to the proposed local harbour improvement scheme, the Trustees would require to apply for a provisional order to carry out the work. The Clerk said that he had written to Sir Murdoch Macdonald, M.P., pointing out the excessive expense and delay incurred in the application for a provisional order, and pointing out the advantage to be gained in obtaining statutory powers if the existing cumbersome machinery was cut down. For such schemes Parliamentary sanction could be dispensed with and power given to some Government department to examine and report on the scheme and, if approved, give sanction for it being proceeded with. The Clerk added that, so far, he had received no reply from Sir Murdoch.

Walker Quay at Fraserburgh Harbour Completed.

It was intimated at a recent meeting of the Fraserburgh Harbour Trustees that the Walker Quay had now been completed and that this work had been done within the estimated cost. Cordial congratulations were offered to the Manager (Mr. King) upon the energetic way in which the work had been performed and so satisfactorily carried out, and it was agreed that the new pier would be a great acquisition to the harbour. A member stated that Mr. King had made a supreme effort and completed this work in time for the herring fishing. It would have been quite possible to have delayed the matter, but he had the interests of those at the harbour so much at heart that he had hurried it forward. Thereafter the suggestion was made that Mr. King's services in relation to this work should be suitably recognised, and it was unanimously agreed to remit this suggestion to the Works Committee for consideration.

Meeting of the Wick Harbour Trustees.

Wick Harbour Trustees recently met when a letter was submitted from the Fishery Board for Scotland enquiring whether the Trustees were prepared to pay the instalments of the preferential Development Fund loans as proposed to be revised. (The Treasury's communication referred to was that regarding the remission of part of the harbour debt). In the course of a lengthy discussion it was stated that the Fishery Board's letter had been acknowledged informing them that the Trustees had already informed the Treasury in February last that they accepted the proposed revision of debts, and the suggestion was made that the Trustees should now approach Sir Alexander Sinclair, M.P.—who was familiar with all the circumstances of the case—so that he might interview the Government authorities. It was unanimously agreed that Sir Alexander Sinclair should be communicated with, and that it should be pointed out to him that over three months had passed since the local Town Council had come to a decision on the matter.

Remission of Loans to Scottish Harbour Boards.

Recently in the House of Commons Mr. Pethick-Lawrence (Financial Secretary to the Treasury) moved a financial resolution authorising the remission of principal and arrears of interest on loans by the Public Works Loan Commissioners to Fraserburgh Harbour Commissioners and on the loans to the Balintore and Thurso River Harbour Trustees. To Fraserburgh it was proposed to remit £40,532 of principal and also all arrears of interest in respect of two loans amounting to £95,000; and the entire debts of £2,000 due by Balintore Harbour Trustees and £13,000 owing by Thurso River Harbour Trustees were also remitted. The resolution also proposed the remission of all arrears of interest due to the Public Works Loan Commissioners in respect of two loans of £50,000 and £45,000 respectively to the Fraserburgh Harbour Commissioners; the unpaid balances of principal and all arrears of interest due to Public Works Loan Commissioners in respect of loans to the Port Ness Harbour Commissioners and the Singwall Harbour Commissioners; and all arrears of interest due to the Public Works Loan Commissioners and outstanding on March 31st, 1930, in respect of a loan of £13,000 to Scrabster Harbour Trustees. The resolution was agreed to.

Improving Winton Pier, Ardrossan.

Some time ago proposals for improving Winton Pier at Ardrossan and for carrying through other developments were put forward by Ardrossan Harbour Company at the request of the Unemployment Committee of the Government. The suggestions were thereafter examined by a visiting committee and detailed plans and estimates were prepared, but apparently no decision on the matter has yet been reached by the Government Committee. It is learned, however, that the developments which the Harbour Company are themselves proceeding with at Montgomerie Pier North are progressing satisfactorily. The dredging work has been finished, and there is now a depth of 28-ft. at low water at the berth.

Delay in Alterations at Inverness Harbour.

An unfortunate delay has taken place in connection with the extensive alterations and improvements at Inverness Harbour. It was reported at a recent meeting of the local Harbour Trustees that a provisional order will be necessary before the trustees can borrow the money required for this scheme. This will mean that the work will be delayed until winter. It was also reported that intimation had not yet been received whether the unemployment grant will be given or not. The Trustees have agreed to wait for this intimation before proceeding with the provisional order.

Modernisation of Ayr and Troon Harbours.

It is announced that important projects for the modernisation of Ayr and Troon Harbours will be undertaken at an early date by the London, Midland and Scottish Railway Company. Electrical bulk conveyor plant for the rapid handling of goods (particularly coal) and the complete installations of modern cranes will be erected at these ports. Siding accommodation near Ayr will also be extended to provide additional accommodation for three hundred wagons.

Ceylon and Indian Notes.

Improving Colombo's Harbour.

A PROPOSAL has recently come before the Colombo Port Commission for extending the harbour accommodation for vessels using the port. It was a commercial proposition sponsored by two individuals, and after discussion the Commission decided to postpone the matter. The following is the reference made to the subject in the official minutes of the Commission meeting:—

Deep water quay and wet dock project: Considered two endorsements dated April 3rd and 24th, 1920, from the Hon. the Colonial Secretary, forwarding two memorials from Messrs. C. M. Rajasundaram and C. M. Chellappah, requesting that they be entrusted with the construction of a deep water quay and a wet dock on the terms suggested by them, together with the reports thereon by the harbour engineer.

The Commission does not consider that the deep water quay and wet dock project is sufficiently far advanced to enable it to consider proposals of the nature made by Messrs. C. M. Rajasundaram and C. M. Chellappah.

The increasing use of the harbour by vessels of all types has for some time kept the question of increasing wharfage before the authorities and three separate schemes have been drawn up. However, it may be many years before all three or even two are carried out. The first move suggested is to build a quay half way between the present graving dock and the north-east breakwater. At present the north guide pier of the graving dock is the only place where heavy work by the crane installed there can be carried out, and this is inconvenienced by the necessity for the removal of the vessel lying there if another ship has to be taken into the graving dock. The inconvenience which attends this operation is sometimes increased by the fact that the engines of the ship to be moved are out of working order and the change of position has to be effected by tugs. It is in order to obviate this difficulty that the building of another quay is suggested.

The suggested quay would be 700-ft. long and about 300-ft. wide, providing sufficient depth to accommodate the biggest ships which use Eastern waters, and the approximate cost is said to be in the neighbourhood of a million rupees. The second part of the scheme is to cut a basin behind the proposed quay capable of accommodating two large vessels. The suggested dimensions of this basin are 900-ft. long, 250-ft. wide, with an entrance 30-ft. wide. The third wet dock scheme is to cut through the main road at Mutwal for a much larger dock than the basin mentioned above, but this section we have been informed would not be carried out for many years. It involves a huge expenditure, and shipping statistics would have first to prove that the outlay would be justified. At the present time Government has no sufficient funds to carry out the three schemes, and they are lying in abeyance, although the private offer mentioned above makes the subject topical.

Dredging.

The dredging of the Colombo Harbour during May, which was in charge of the dredger "Sir William Matthews," has been carried on satisfactorily. During the month a total quantity of 25,650 cubic yards of dredged material was dredged from the coal berth area and the site of mooring No. 24 and deposited at sea.

Increase in Colombo Shipping.

There has been a distinct increase in the amount of shipping using Colombo in late years, as is shown by the harbour statistics.

In 1928 the number of vessels which entered the port was 3,251, and last year this had risen to 3,469. The number of ships, excluding sailing vessels, in 1928 was 2,966, and in 1929 it was 3,228. The average gross tonnage, however, of this section of vessels fell from 6,888 in 1928 to 6,706 in 1929. This decrease is difficult to explain.

Colombo Harbour Revenue during May.

The following table indicates the Colombo harbour revenue during the month of May this year:—

	Rs.	Cts.
Harbour Dues	296,552	40
Lake to Harbour Dues	1,595	74
Warehouse Rent	63,489	84
Other Rents	19,465	81
Pilotage	24,425	00
Other Harbour Collections	26,067	02
Railway Traffic	5,076	79
Revenue of Oil Installations	89,406	03
AT OUTPORTS.		
Port Dues	3,021	32
Warehouse Rent	4,776	65
Others	1,757	25
Total ...	535,633	85

For the previous month the total was Rs. 467,544.74.

Ceylon's Foreign Trade in May.

The unsatisfactory state of trade in Ceylon is only too evident from the perusal of the Customs Returns for May this year. Compared with the same month of 1929, imports show a drop of Rs. 5,000,000, and compared with 1928 the decrease is Rs. 5,500,000. Exports are down by an even greater margin. Last month the exports of the island were valued at Rs. 29,521,289, which is Rs. 10,000,000 less than during May, 1929. Compared with May, 1928, the fall is certainly not so great, but when the figures for this month in 1927 and 1926 are examined it is found that the exports of May, 1930, compared with those of 1926 show a drop of Rs. 19,895,854.

The only satisfaction which can be derived from the latest Customs Returns is poor recompense for the general financial depression—that the exports of Ceylon for last month increased over the previous month by Rs. 145,026. However slight an improvement, it is welcome. Last month the total exports amounted to Rs. 29,521,289, and this figure, with the exception of March, was the highest of the totals for the five completed months of 1930. There is, however, little satisfaction in this, as the drop in the amount of exports for the first five months of this year compared with the same periods of 1928 and 1929 is very pronounced. The drop compared with 1929 is over Rs. 30,000,000, and compared with 1928 it is over Rs. 23,000,000.

Imports in May showed a distinct fall, the total being Rs. 25,637,365, which was Rs. 3,640,146 less than the previous month and lower by over Rs. 1,000,000 than any month since February, 1927. Compared with May, 1929, the total imports declined by Rs. 5,135,339. Added together the import totals for the first five months of this year, the result is Rs. 143,876,882, which is less than the same period of 1929 by Rs. 30,500,000 and of 1928 by Rs. 35,500,000. The duties on imports for the first five months of this year have decreased by Rs. 752,542 in spite of the big increase in revenue from kerosene oil and motor spirit of Rs. 1,760,193. The collected duties during this period totalled Rs. 16,705,319 and the collection of import duties in May realised Rs. 2,587,532.

Export duties for the first five months of 1930 still maintain the gloomy aspect of trade, and are Rs. 103,209 behind those of the same months of 1929. The fall during this time is accounted for almost entirely by the decrease in the amount derived from copra, which is shown as Rs. 104,998. Customs revenue on rubber and tea show increases for the five months of 1930 ending on May 31st when compared with the same five months of 1929. Rubber duty receipts have increased by Rs. 10,362 and tea by Rs. 44,531. The value of rubber exported to the United Kingdom last month amounted to Rs. 1,128,867; to British possessions, Rs. 12,027; and to foreign countries Rs. 4,894,588. Tea valued at Rs. 11,824,223 was sent to the United Kingdom last month and British possessions took Rs. 3,600,712 worth. Foreign countries were Ceylon's creditors to the extent of Rs. 17,711,197. It is interesting to note the difference in value of rubber now and in 1928. In December of that year 3,632,202 lbs. of rubber valued at Rs. 1,846,358 were exported to the United Kingdom, and in May this year 3,344,794 lbs. were exported to the same destination, and the value was only Rs. 1,128,867—a difference of Rs. 717,491, although the export figures are only 287,408 lbs. less.

The duties on imports of kerosene oil and motor spirit into Ceylon last month amounted to Rs. 290,266, bringing the total for the five months to Rs. 3,234,322, which was an increase of Rs. 1,760,193 over the corresponding five months of the previous year. Harbour dues during May totalled Rs. 296,552, and the total revenue from the port, warehouse and duties also showed depression, the whole amount decreasing by Rs. 163,170.

India's Foreign Trade in May.

The following are the figures of India's foreign trade in May this year:—

Imports of private merchandise, 21.91 lakhs; exports (including re-exports), 21.85 lakhs; net imports of gold, 177 lakhs, and silver, 146 lakhs; total visible balance of trade in mechandise, 93 lakhs in favour of India; balance of remittances of funds, minus 265 lakhs; tonnage of vessels entered with cargoes, 855,000, and cleared, 736,000.

Ceylon and Indian Notes—continued.

Colombo Port Commission.

At a meeting of the Colombo Port Commission held on June 16th, with Mr. B. G. de Glanville, the Principal Collector of Customs, in the chair, a questioned discussed at length was the rate at which rent should be charged for the area of six acres of coaling ground at Mutwal occupied by the Ceylon Government Railway. It was ultimately decided that the railway should be charged rent for the above area at the rate of Rs. 5,000 per acre per annum, with effect from October 1st, 1929.

The Commission, at the same meeting, also considered the proposed increase of oil maintenance charge, and after mature deliberations it was decided to increase the oil maintenance charge to 55 cents per ton, the new charge, if possible, to come into effect on August 1st, 1930, and that the oil companies should be informed of the action proposed to be taken.

The suggested revision of the charges levied for the fumigation of vessels was yet another subject that came up for discussion before the Commission.

It was decided to approve the following new scale of charges: For each hour, Rs. 20.00; for each hour beyond the ordinary working hours in addition to the above charges, Rs. 4.00, and for moving hose during fumigation, each move Rs. 15.00. Time calculated from one hour before fumigator is moored alongside ship to one hour after fumigator has left the ship. Ordinary hours: Monday to Friday, 7 a.m. to 4.30 p.m., and Saturday's from 7 a.m. to 12.30 p.m. only.

Colombo's Tonnage of Imports and Exports.

The tonnage of imports and exports at the port of Colombo during the periods specified is as follows:—

	May, 1930. Tons.
Imports (excluding coal and oil) ...	95,241
Exports	58,647
Total ...	153,888

	May, 1929. Tons.
Imports (excluding coal and oil) ...	100,154
Exports	66,376
Total ...	166,530

	May, 1928. Tons.
Imports (excluding coal and oil) ...	90,486
Exports	63,316
Total ...	153,802

Colombo Harbour Matters.

The following is a table of the number and tonnage of vessels engaged in trade other than country craft which entered and cleared at the port of Colombo. It is a comparison of May and other figures for the three years ended May, 1930, and will be read with interest:—

	Vessels engaged in Foreign Trade	
	Number.	Tons.
ENTERED.		
During May, 1930	244	1,055,415
During May, 1929	293	1,174,440
During May, 1928	246	1,008,091
During the five months ended May, 1930 ...	1,279	5,528,356
During the five months ended May, 1929 ...	1,400	5,674,826
During the five months ended May, 1928 ...	1,223	5,141,659
CLEARED.		
During May, 1930	240	1,054,204
During May, 1929	285	1,145,799
During May, 1928	251	1,081,367
During the five months ended May, 1930 ...	1,277	5,502,585
During the five months ended May, 1929 ...	1,401	5,666,261
During the five months ended May, 1928 ...	1,227	5,149,294

	Vessels engaged in Coasting Trade	
	Number.	Tons.
ENTERED.		
During May, 1930	—	—
During May, 1929	—	—
During May, 1928	—	—
During the five months ended May, 1930 ...	—	—
During the five months ended May, 1929 ...	1	103
During the five months ended May, 1928 ...	3	8,809
CLEARED.		
During May, 1930	2	4,970
During May, 1929	1	3,149
During May, 1928	—	—
During the five months ended May, 1930 ...	7	21,331
During the five months ended May, 1929 ...	7	20,330
During the five months ended May, 1928 ...	5	10,878

H.M.S. "Keith" Launched.

The flotilla leader "Keith," which was launched from the Barrow Works of Messrs. Vickers-Armstrongs, Ltd., by Mrs. Jenkins (the wife of the Director of Navy Contracts) on Thursday, the 10th July, is a twin-screw ship constructed under the 1928 Admiralty programme.

The principal dimensions of the vessel are as follows:—Length overall, 323-ft.; breadth, 32-ft. 3-in.; depth to upper deck, 19-ft.

The ship is designed for service with torpedo boat destroyers of the "Beagle" Class, and accommodation is provided for the senior officers of the flotilla.

The armament consists of:—Four 4.7-in. guns, two 2-pdr. high angle pompom guns, four Lewis guns, one Vickers' machine gun, and eight 21-in. torpedo tubes arranged in two quadruple mountings.

The propelling machinery will consist of two sets of Parsons turbines, with single reduction gearing, each set comprising one high pressure and one low pressure turbine, working in series, giving a total shaft horse-power of 34,000.

The condensers will be of the regenerative type, underslung from the low pressure turbine casings.

Steam will be supplied by three Yarrow water tube boilers, oil fired, fitted with super-heaters and designed for a working pressure of 300 lbs. per sq. in. and a super-heat of 200 deg. F.

All the auxiliaries are to be steam driven, and the electrical requirements of the ship will be provided for by two 50 k.w. turbo-driven and one 20 k.w. diesel-driven electric generating sets.

Mr W. St. D. Jenkins, C.B., C.B.E., accompanied his wife to Barrow, and Messrs. Vickers-Armstrongs, Ltd., were represented by Commander Sir A. Trevor Dawson, Bt., R.N., Commander C. W. Craven, O.B.E., R.N. (managing director of the Barrow and Newcastle Works of the company), Mr. F. C. Yapp (special director in London), Mr. G. W. Barr and Mr. J. Callender (special directors at Barrow), and the principal officials of the Barrow Works, together with their wives.

Among the guests who were present at the launch were:—The Misses Jenkins, G. Newsom Jacob, Esq., F. F. Fisher, Esq., O.B.E., W. H. Judson, Esq., I.S.O. (Assistant Directors of Navy Contracts), and Mrs. Fisher; B. F. Pool, Esq. (Navy Contracts Dept.), Engineer-Commander D. C. Bennett, R.N., and Mrs. Bennett, C. H. Leddra, Esq., R.C.N.C., and Mrs. Leddra, Colonel Mehmed Eyup Bey (Chief of the Turkish Inspecting Commission at Barrow), Lieut.-General Sir Matthew H. G. Fell, K.C.B., C.M.G., and Lady Fell, and the British and foreign officers and inspectors stationed in Barrow in connection with contracts in hand at the Naval Construction Works, together with their wives.

Sir Trevor Dawson presided at a lunch in the general offices after the launch, and in proposing good luck to H.M.S. "Keith," he asked Mrs. Jenkins to accept a small memento of her visit to Barrow with the best wishes and thanks of the chairman and directors of the company.

Reductions in London Port Charges.

Details of some of the reductions in port charges recently announced by the Port of London Authority are now available.

Although amended schedules of charges have not yet been published, it is announced that the main reductions will be as follows:—

Port Rates on Goods: A reduction of 5 per cent. off the foreign inward and outward rates.

Dock Rates on Vessels: The reductions consist principally of—Class 1 vessels: Dues reduced by 1d. from 1s. 10d. to 1s. 9d. per n.r.t. Class 2 vessels: Dues reduced by 1d. from 7d.—10d. scale to 6d.—9d. scale per n.r.t. Rent on vessels reduced from 7-16d. to $\frac{3}{8}$d. per n.r.t. per day, or in the case of vessels trading coastwise or to or from home trade ports, 2-7d.

These reductions come into operation on September 1st next.

For charging purposes vessels in Class 1 are those laden from ports or places outside Europe, the Mediterranean and the Black Seas, and vessels with transhipment good from such ports or places. It also includes vessels loading for these ports or places.

Class 2 is in respect of vessels from or for all ports in Europe (excepting ports in Great Britain and Ireland) and ports in the Mediterranean and the Black Seas.

The full reductions announced by the Port Authority are estimated to save users of the port £120,000 per annum, which brings the total reductions in port charges effected since 1925 to an annual sum, including the relief passed on by the Authority under the Government De-rating Scheme, of £942,000.

The total tonnage of vessels that used the Port of London during the 12 months ended March 31st was over 58,500,000 net registered tons.

The Humber Ports.

Queen's Dock, Hull.

THE proposal embodied in the London and North Eastern Railway Company's omnibus Bill to sell the Queen's Dock and the surrounding estate to the Hull Corporation for an agreed sum of £117,000 successfully survived the opposition offered to it before the House of Lords Committee presided over by Lord Loch. Terms having been arranged with the tenants on the dock estate, the opposition was reduced to that of the Hull Chamber of Commerce and of the River Craft interests, the main contention being that the continuance of the Queen's Dock was necessary to the facilities of the port, and especially to the lighters, etc., engaged in the dock-to-dock transport of grain, etc., from the large incoming steamers. What, however, undoubtedly had considerable weight in the minds of their lordships in giving assent to the proposed sale was the fact that in recent years very little use had been made of the dock by commercial interests, and that the state of disrepair was such that it would take a very substantial sum to put it in order again. Mr. Thos. Hornsby, Divisional General Manager of the North Eastern area of the L. and N.E.R., stated in evidence that the dock dues and rent of ships collected at Queen's Dock, which in 1913 were £2,441, had fallen in 1928 to £445, this being attributable to the fact that as ships became larger they went to bigger and more modern docks and could not be accommodated in Queen's Dock in any case. Mr. Hornsby also revealed the interesting fact that the annual maintenance cost of the dock on a five years' average was £3,023 for repairs alone. The working expenses for 1927 were about £5,000, making a total expenditure of over £8,000 a year to keep the dock open. It was this and the collapse of the lock last year that led to the decision of the company that it was impracticable to put the dock in order.

With reference to the suggestion that the £117,000 would be spent in Hull, Mr. Hornsby commented that the company were not going to get that sum. Out of it they would have to spend £40,000 to £50,000 in filling in the dock. That, of course, would be spent in Hull. In the meantime there were three substantial schemes of improvement of other docks and quays and the facilities involving a total expenditure of £372,000. These include a new fish landing stage and offices at the St. Andrew's Dock and facilities elsewhere for the dealing with 20-ton coal wagons. When the Bill receives Royal Assent the work of filling-in the dock will be taken in hand and a temporary wooden bridge on piles erected at the west end lock pit to relieve the heavy traffic passing over the present bascule bridge at Whitefriargate. The intention is to lay out the site as an open space or boulevard and to erect a technical school and other buildings facing it. Proposals have been made to construct an underground garage and open air market, but neither of these is likely to find public favour.

Apart from the commercial and shipping interests, who naturally are disappointed at the non-success of their opposition, the general view is that the Hull Corporation have made a good bargain. The cost of the site works out at only about a guinea a square yard. It is now for the traders of the port to exert further pressure on the London and North Eastern directors to provide alternative accommodation for shipping. The grain and seed lighters are being provided with more space at the entrance to the River Hull, but most important is the need for an extension of the King George Dock by the construction of an additional " arm," part of the original plan, which would bring the water area of that dock up to 83 acres. At present it is 53 acres. The directors are favourably disposed to the suggestion and it would not occasion surprise if a definite announcement were made on the subject before very long. Hull, as a port, it is considered, cannot afford to stand still. The shipping industry and trade generally are admittedly passing through a difficult period just now, but it is necessary to look ahead and to anticipate requirements when the tide turns, as everyone hopes and believes it will.

Import Timber Season Commences.

The import timber season at Hull has commenced in earnest. The docks devoted to this trade are very busy, congestion has thus far been avoided, thanks in some measure to the extra facilities provided at the Victoria Dock. Here a large timber pond has been filled in and good progress made with the construction of more bogie sidings. A feature is the great preponderance of cargoes from Russia, nearly 40 coming to hand in the first six weeks of the " season." These are listed in from Leningrad, Archangel, and White Sea ports, Murmansk, and even from Odessa. Shipments of coal are falling off and reflect the depression which the market has been feeling for some weeks past. New business is very scarce and if it were not for the long contracts now running the position would be parlous indeed. In the second quarter of the year the exports of coal (foreign) from the Humber ports were 1,490,140 tons as against 1,575,871 tons in the corresponding period of last year. The total for the six months is 2,842,878 tons against 2,881,356 tons—a decline of 38,478 tons.

Hull as an International Air Port.

Energetic steps are being taken to make Hull an international air port as well as a great sea port. A proposal is on foot to raise £10,000 prize money for an air race round Northern Europe terminating at Hull, but expert opinion inclines to the view that the money that might be available would be better spent in subsidising an experimental air service between Hull and the Continent across the North Sea, in which case there would be a probability of financial assistance being given by the Air Ministry. In the meantime the Port Development Committee is urging upon the Hull Corporation the need for being prepared with a seaplane base in the Humber. Plans have been submitted to the Air Ministry of a site at Paull, east of Hull and within immediate reach of the Hull Municipal Aerodrome. The site has been inspected by Major Welling and the opinion of the Government is expected shortly. The intention of the Corporation is to utilise an old and disused pier at Paull in connection with the water area scheduled as a seaplane alighting base and five acres of land in the vicinity as a depot.

Proposed New Bridge across the Humber.

The proposed new bridge across the River Humber in the neighbourhood of Hull, to be erected at an estimated cost of £1,750,000 to plans prepared by Sir Douglas Fox and Partners, is now under consideration of the local authorities of the East Riding and North Lincolnshire. It is understood that the Government will be prepared to contribute up to 80 per cent. of the cost subject to the local bodies doing their share. The Hull Corporation has given a good lead by voting £200,000, and some of the smaller authorities have voted varying sums. The East Riding County Council is, however, lagging behind. It is curious to note that while North Lincolnshire generally welcomes the scheme the East Riding outside Hull is far from enthusiastic about it and says in effect: " If Hull wants it let Hull pay for it." It is hoped, however, that present prejudice will be overcome and that Hull, the East Riding and North Lincolnshire will go unitedly to the Government and ensure the project going forward.

Ship Canal Scheme Shelved.

Once again the proposal of a ship canal between the West Riding port of Goole and Leeds has been shelved. The Committee of Inquiry have reported that it is not advisable to proceed with the project at the present time. One of the principal factors influencing the members was the experience of the Manchester Ship Canal. Mr. T. F. Braime, last year's president of the Leeds Chamber of Commerce and the chief protagonist of the scheme, in an interview stated that the deputation which visited Manchester were told that when the Ship Canal there was constructed the promoters were involved in law costs approaching £750,000, owing to unforeseen difficulties in acquiring rights of way and in the construction of bridges. (The scheme for the Leeds Ship Canal includes 20 to 30 bridges). Then again, since that time road transport has made tremendous strides, and the Committee were told at Manchester that if the Canal had not been built and the scheme were put forward at the present time, it would not be proceeded with. So far as the Leeds scheme was concerned, Mr. Braime stated that they could not get ships of more than 4,000 to 5,000 tons from the Humber, through the Ouse and up to Leeds without deepening the channel.

Hydraulic Pumping Plant for Leith Docks.

The Pulsometer Engineering Co., Ltd., of Reading, have recently secured the contract for the hydraulic pumping plant for Leith Docks. The plant is to consist of two sets for 800 gallons per minute and one for 600 gallons per minute, each discharging against a pressure of 800 lbs. per square inch. The motors are to be suitable for operating on a 6,600 volt supply and will be automatically controlled from an accumulator. In addition, a return water pump and feed tanks, two venturi tubes, piping and valves are to be supplied. The motors will be by Messrs. Bruce Peebles and Co., Ltd., and the control gear by The Electric Control Co., Ltd.

North-East Coast Notes.

Trade Statistics.

TRADE statistics from all parts of the North-East Coast show a shrinkage in the shipments of coal and coke, and large numbers of idle vessels. The latest figures available at the time of writing with respect to the Tyne shipments showed a decrease of 139,450 tons for the week ended July 5th, the total being 287,197 tons. Coke shipments, on the other hand, at 21,825 tons indicated an increase of 6,373 tons. The Tyne fuel shipments for the six months of the year are down by about half a million tons on the previous year. It may be noted, however, that oil fuel bunkers, on the other hand, had an increase: 103 vessels having taken 33,553 tons compared with 68 vessels and 20,233 tons last year.

The reports submitted at the last meeting of Blyth Commissioners gave five months' shipments to the end of May totalling 2,166,645 tons, a decrease of 4 per cent. on 1929, and an increase of 12 per cent. on 1913. The total shipments from the Wear for the first five months of the year were 2,091,424 tons of coal, and 30,700 tons of coke, showing jointly a decrease of 5 per cent. on the previous year.

A Giant Crane for the Tyne.

At the last meeting of the Tyne Improvement Commission an application from Vickers-Armstrong, Ltd., for permission to erect a 250 tons hammer-head crane at the Naval Yard, High Walker, was granted. The maximum outreach of the jib is to be about 164-ft. riverward of the face of the quay and a travelling crane running on the jib is to be capable of reaching a distance of about 187-ft. from the face of the quay. The height to the under side of the jib over the waterway is to vary from about 164-ft. to about 188-ft. above h.w.o.s.t. and the top of the travelling crane jib is to be about 240-ft. above the same level. Mr. Hindmarsh, the Engineer, remarked that the crane would be the largest of its kind in the world. At the same meeting a letter was read from Messrs. Merz and McLellan, acting for the Central Electricity Board, in regard to an overhead transmission line over the Tyne, but the Commissioners declined to consider the question of a transmission line over the river.

The Parliamentary Bill promoted by the Newcastle Corporation seeking powers to construct extensions of their quay, has passed the third reading by the Unopposed Bills Committee of the House of Lords, all opposition to the proposal having been withdrawn.

Swedish Lloyd Service.

An interesting event recently was the visit of the steamer "Northumbria," of the Swedish Lloyd Line, to the Tyne, after having been refitted and supplied with refrigerating plant. Luncheon was served on the vessel and attended by many members of the North-Eastern Produce Exchange. Mr. Herbert Metcalfe, the managing director of the Swedish Lloyd Line, was in the chair, and welcoming the guests, said there had been some talk of a dearth of refrigerating space on vessels from Sweden to the Tyne. He confessed that Newcastle might have been treated in a somewhat stepmotherly manner, but that was not because of the Swedish Lloyd's desire, but because the volume of trade made it rather difficult to do what they would like to do. However, in the "Northumbria" they had a vessel replete with all the modern facilities for such a produce trade as they hoped to develop, and if matters went as well as they hoped they would there would soon be another vessel similarly equipped. It largely rested with the importers themselves. The Swedish people were building new dairies and they hoped that the import trade to Newcastle would increase as a result. The Swedish Lloyd Line would certainly do what they could in the way of reasonable and just freights if the importers would support them. Mr. Metcalfe suggested that there might be some alleviation in certain charges at Newcastle. The authorities had shown much consideration, but the difference between the cost of produce leaving the holds of their ships and reaching rail was very great and beyond the control of the shipping company. If they were going to add 7s. or 8s. after leaving the hold on every ton of produce it was a very serious item.

Interesting Wear Proposal.

A most interesting suggestion has been made respecting a further development on the River Wear. Mr. M. H. Kellett, of Biddick Hall, who is largely interested in Washington and Usworth pits, is credited with the proposal that the river should be deepened as far as Washington so as to enable coal to be shipped from there. There is said to be nothing impracticable in the scheme, but it would involve very considerable dredging work, for there is no depth of water higher than Hylton, and even at that point only small coasters can be dealt with. The question has not got beyond the stage of discussion, but the importance of the proposal, if feasible, may be gauged from the fact that the output from the pits is about 3,000 tons a day, while there are also important quarries and chemical works in the district.

The River Wear Commissioners have just embarked on a big scheme to protect Roker Pier by laying down a length of 1,150-ft. along the outside of the pier at its head, and 500-ft. inside with whinstone rubble. Altogether some 75,000 tons of rubble are to be laid down and the task will take between two and three years. Messrs. McLaren and Co., of Belford, Northumberland, have been entrusted with the contract, which is said to be worth about £35,000.

Smart Work at the Docks.

Instances of smart work at the docks in the North-East are continually coming to hand. In regard to discharges, a good performance is reported from the Wear. The s.s. "Consett" arrived at night and commenced to unload at 7.30 p.m. and by 6 the next morning had completed the discharge of the whole of her iron ore cargo for the Consett Iron Co., which totalled 1,911 tons, in nine working hours. This speaks volumes for the discharging appliances at the South Docks.

A record in unloading has also been set up at Blyth. It was achieved in discharging pit props from the steamer "Astra" by means of three electric cranes belonging to Blyth Harbour Commission. The "Astra" entered the port with 1,064 cubic fathoms of pit props and the load was discharged in 79 crane hours—a ton every two minutes.

The London and North-Eastern Railway report that the s.s. "Tunisia" arrived at Hartlepool staiths at 10.30 a.m. recently, and commenced loading at 11 a.m. Cargo and bunkers totalled 7,460 tons, and the total time occupied was 31 hours 5 minutes, an average of 240 tons per hour. The vessel sailed 50 minutes after completing loading.

Personalia.

Lord Kirkley, Chairman of the Tyne Improvement Commission, is shortly going to South Africa, at the head of a Government mission associated with a general scheme for the development of British export trade.

Mr. Alfred Kewney, manager of Messrs. Hawthorn, Leslie and Co.'s dry dock department, Hebburn, has been appointed manager of Messrs. Palmer's Shipbuilding and Iron Co.'s dry docks at Jarrow and Hebburn.

After being on the Quayside for more than half a century Mr. Richard A. Holland, of Messrs. Arthur Capel and Co., has just retired from 'Change. He had completed 28 years on the Quayside when he accepted the management of the Newcastle office of Mr. Cuthbert Wilkinson, a well-known Sunderland coal exporter.

Mr. H. Gallacher, shipyard manager with Messrs. W. Doxford and Sons, Ltd., Sunderland, has been appointed managing director of Messrs. W. Simons and Co., Ltd., Renfrew.

Mr. John Matthew Martin, Vice-Consul for Rumania in Newcastle, has been awarded the Royal Order of the Crown of Rumania (Chevalier) in recognition of his work. Mr. Martin is employed in the offices of Messrs. Furness Withy, Newcastle.

The directors of the Mercantile Dry Dock Co., of Jarrow, have appointed Mr. Charles A. James, as general manager and elected him on the board of directors in succession to his brother, the late Capt. M. C. James.

Surveys begun for New St. Lawrence Bridge.

The engineers have begun surveying operations along the St. Lawrence River near Cornwall, Ontario, with the object of selecting the most favourable location for the new all-Canadian bridge which it is proposed to erect across the stream at a cost of approximately $5,000,000.

The Cornwall Bridge Company received during the recent session of the Canadian Parliament the necessary authority for the erection of the bridge, and the concern has an authorised capital of $7,000,000. As the southern end of the structure is close to the Canada-United States frontier, its construction will greatly facilitate international highway traffic by obviating the crossing of the river by ferry at points above Montreal.

The north end of the structure is likely to be placed about four miles east of Cornwall, Ontario, at Flanagan's Point. The south end, with its communicating roadway about two miles in length, would be in the Province of Quebec, and the bridge would span the river from the north shore to Big Colquhoun Island, thence to Little Colquhoun Island, St. Regis Island and St. Regis village on the south shore. Connection will be made at the frontier with the New York State highways.

Port of Southampton Topics.

Satisfactory Figures for First Six Months.

SOUTHAMPTON DOCK traffic during the first six months of this year show a very satisfactory position, and the only black spots in the whole list of statistics are those relating to cargo totals. Under all other headings there have been increases, in some cases considerable, compared with the figures for the first half of last year.

In recent years Southampton has made great efforts to improve her standing as a cargo port, and while progress has slowly but surely been made, there have been many factors which even in normal times rendered this difficult. Shippers who have used other ports for years are naturally chary in altering their plans. That, however, is but a small factor as compared with the disadvantage under which Southampton labours on account of her distance from the great industrial areas of the North and Midlands.

The progress made, nevertheless, indicated that she was attracting a measure of trade from her rivals, and it is to be hoped when there are more facilities for the discharge of cargo —and that will certainly be the case when the new docks are completed—the good work will continue.

Meanwhile, there is a slight depression, as may be gathered from the fact that imports fell by 3,326 tons during the six months ended June 30th, as compared with the corresponding period of last year, and exports fell by the greater figure of 44,857 tons. This downward tendency in inward cargo is attributable to a very large extent to the decrease in timber shipments, largely from Russia, but as it is anticipated that this cargo will be received in large quantities in August and September, there is little ground for concern. There is in fact a distinct reason for regarding the latter part of the year hopefully, for developments in a direction which it is not possible at the moment to disclose are anticipated during the course of the next few months.

As far as exports are concerned Southampton's decrease is but a reflex of the general depression which exists throughout the country. But while there is a decline in the amount of cargo exported, it is a matter of gratification that customers are not lost to the port. They are merely " going steady " for the time being, and this being the case there is reason to suppose that when conditions become brighter the traffic will again swell to its normal proportions.

The number of vessels using the port increased substantially during the period under review, inward ships increasing by 141 to 1,782, and outward ships by 142 to 1,796. These increases are reflected in the gross and net tonnage returns. Compared with the corresponding half of last year the gross inward tonnage increased from 7,814,750 to 8,109,231, while the outward gross tonnage increased from 7,994,411 to 8,221,788. The net tonnage totals of 4,334,935 inward and 4,397,867 outward showed increases respectively of 167,255 tons and 136,088 tons.

With regard to passengers Southampton has nothing to fear, and it may be doubted whether she can ever be dispossessed of her title of premier passenger port in the United Kingdom. During the six months under review the number of inward travellers increased by 7,942 to 98,316, and although there was a decline of 1,304 outward (from 101,758 to 100,454) this is of little account as far as the port's prestige is concerned. The all-important fact remains that for the first half of the year the passenger movement through the docks increased by 6,638.

The June figures, compared with those for June, 1929, show increases in the number of ships using the port, the totals being 392 inward and 395 outward, increases respectively of 12 and 15, but the tonnage totals were slightly lower and cargo returns showed a drop. Passenger returns, however, were pleasing, there being an increase of 1,731 in the number entering or leaving the port.

Record in Big Liners Handled.

Southampton, as the premier passenger port in the United Kingdom, can boast of a number of records, but July 4th was a red-letter day, for the shipping companies' staffs were called upon to deal with passengers, baggage and mails carried by four of the vessels of the group known as the " Big Six." Southampton has frequently handled three of the mammoth Atlantic liners on one day, but never previously have four figured in a single day's programme. The feat was made necessary by the White Star liner " Majestic " missing the tide and not being able to dock the previous night. Besides the " Majestic," which brought over 1,987 passengers, the United States line's flagship " Leviathan " and the Cunarder " Mauretania " arrived at the port from New York, the " Leviathan " with 1,798 passengers and the " Mauretania " with 1,057. The fourth big liner to be dealt with was the Cunarder " Berengaria," which was prepared for departure for New York early the next morning. The world's three largest vessels were, therefore, associated in the Ocean Dock at the same time, a unique assembly of big ships.

This event was, however, eclipsed later in the month, for the world's four largest liners were at Southampton together during the period covered by the two days, July 22nd and 23rd, and with one other of the big trans-Atlantic liners in port at the same time there was a total tonnage of over a quarter of a million handled at the docks in five ships alone.

The four largest vessels were all inward bound. They were the United States Line's " Leviathan " (59,956 tons), the White Star liner " Majestic " (56,621 tons), the Cunarder " Berengaria " (52,226 tons), and the North German Lloyd liner " Bremen " (51,656 tons). The fifth vessel was the White Star liner " Olympic " (46,439 tons), which was outward bound for New York.

The presence in port at the same time of so many of the world's biggest vessels constitutes a record for Southampton and probably for any port. Few ports handle in two days five ships with a total tonnage of a quarter of a million. The fact that the big liners were on this side of the Atlantic at the same time was due to this being the " peak " period of the season for East-bound traffic. In a few weeks the rush back to America will begin.

Another interesting fact with regard to the presence here of the four biggest vessels in the world is that they were all built in German shipyards. The " Majestic " was formerly the " Bismarck," the " Leviathan " was the " Vaterland," and the " Berengaria " was the " Imperator," the ships being handed over after the war. The " Bremen," of course, was built for the North German Lloyd only last year.

Development of Traffic with the Far East.

The development of the traffic between Southampton and China and Japan by the P. and O. service recently necessitated two extra callings being arranged. A third had also to be fixed during the past month, the " Berrima " calling on the 19th on her way to China to load general cargo.

The first homeward voyage of the East Asiatic motor liner " America " from the North Pacific was an auspicious one, for every berth being occupied. These vessels do not carry large numbers of passengers, and of the 60 first class about one-third landed at Southampton at the end of the month when the liner called before going to her home port on the Continent. By this call the " America " inaugurated the homeward calls at Southampton in connection with the North Pacific service. Another of the East Asiatic vessels, the " Lalandia," called early in the month to embark passengers for the Far East. It was an excellent indication of the increasing passenger traffic that the " Lalandia " called so soon after the recent visit of the " Fionia."

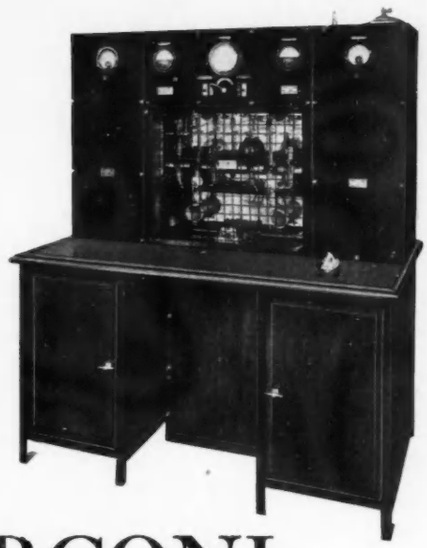
Another liner on the Far East service, the Rotterdam Lloyd's " Baloeran," called at Southampton on completing her maiden voyage to Batavia and landed 140 passengers, the biggest number the Line has disembarked at Southampton this season.

Obituary.

Captain Edward Weatherston Day, for 32 years in the service of the old Castle Line and later the Union Castle Line, died at Southampton on July 2nd. Captain Day, who retired from the service in 1923, had an eventful career at sea. He was twice torpedoed during the war—experiences which left their trace on his health—and in September, 1922, he was in command of the Kinfauns Castle when she assisted in the rescue of 385 passengers and crew of the German steamer " Hammonia," which sank in the Atlantic shortly after leaving Vigo.

In 1911, when in command of the " Cawdor," he rescued the crew of the Dutch steamer " Willy " during a heavy gale in the North Sea; in 1913 he rescued the crew of the sailing ship " Lucie " off Mauritius; in 1916, when in command of the hospital ship " Glenart Castle," he rescued two airmen in the Mediterranean and picked up 40 members of the crew of the torpedoed steamer " Welsh Prince." In 1917 Capt. Day displayed masterly seamanship when the " Glenart Castle " was mined 12 miles off Portsmouth, for 525 wounded men were safely disembarked, after which Capt. Day brought his ship into port.

Capt. Day's elder son is second officer of the " Bampton Castle."



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The Port of New York.

Latest Data issued by the Bureau of Commerce.

Federal Appropriation for New York Harbour Channels.

PRESIDENT HOOVER, on May 28, 1930, approved the "War Department Appropriation Act," providing a total of $55,000,000 for the maintenance and improvement of waterways in the United States.

The Chief of Engineers has allocated $46,880,000 of this appropriation to specific projects; $3,161,360, or 7 per cent. of this, has been allocated for channel improvement within the Port of New York District, as follows:—

East River	$900,000
Newark Bay, Hackensack and Passaic Rivers	742,000
Jamaica Bay	500,000
Bay Ridge and Red Hook Channels	250,000
Westchester Creek	205,000
Supervisor, New York Harbour (control of dumping, oil pollution, etc.)	174,360
New York Harbour	165,000
Hudson River Channel, above Battery	100,000
New York-New Jersey Channels (Arthur Kill, Kill von Kull and Raritan Bay)	100,000
Coney Island Channel	25,000
Total ...	$3,161,360

In addition to the appropriations for channel improvements within the Port of New York District, $1,125,000 has been allotted for carrying on the deepening of the Hudson River Channel between New York and Albany.

The appropriation just approved should not be confused with the improvements to be authorised by the Rivers and Harbours Bill, passed by the House of Representatives April 21st, and now before the Senate. The Rivers and Harbours Bill authorises new channel improvements in the Port of New York District, for which appropriations in excess of $3,000,000 will later be made. The projects covered by the Rivers and Harbours Bill were discussed in detail in the July issue of *The Dock and Harbour Authority*, page 278.

War Department Recommends Deepening of Brooklyn Bay Ridge Channel.

The War Department Engineers, on May 28th, 1930, recommended to Congress that the Bay Ridge Channel be further improved and widened to accommodate the large steamers now docking in that section.

Recommendations of Congress call for a 550-ft. increase in the width of the 40-ft. channel from a point opposite Bay Ridge Avenue as far north as Red Hook. The estimated initial cost is $1,150,000, with $75,000 annually for maintenance.

The action of the War Department follows the recommendations of the Port Authority presented in February, 1930, at a public hearing before the District Engineer. The Port Authority suggested the widening of the channel by 800-ft., in order to accommodate the large passenger lines now docking in South Brooklyn. The Army Engineers cut this increase to 550-ft. in their recommendations to the Rivers and Harbours Committee of the House of Representatives.

Value of Foreign Commerce at Port of New York.

The foreign trade of the Port of New York continues below that of a year ago in common with other ports of the United States. During the month of April, foreign commerce at New York was $280,369,000, as compared with $360,142,000 in April, 1929, a loss of 22 per cent., while the total for the United States was 24 per cent. below last year. Exports for April, 1930, totalling $132,003,000, decreased $11,300,000 under the March figure, and were 18 per cent. less than a year ago.

Exports of automobiles, parts and accessories fell off 40 per cent., and packing-house products 26 per cent. below last year, while industrial machinery gained 19 per cent. These three commodity items constituted about 50 per cent. of the value of exports at New York. Of the exports of automotive products of the country, over 60 per cent. passes through the Port of New York.

The value of imports at New York during April were $148,366,000, in comparison with $200,158,000 in the same month last year, representing a drop of 26 per cent.

Grain Exports.

The volume of grain exports from the Port of New York in April amounted to 3,791,000 bushels, a loss of 9.6 per cent., as compared with 4,193,000 bushels for the same month last year.

Canadian grain in transit amounted to 3,653,000 bushels, almost equalling the 3,718,000 bushels exported in April, 1929.

	April 1930 Bushels	April 1929 Bushels	Net Change Amount	Net Change Per cent.
Through the Port of New York—				
Domestic and Canadian Grain	3,791,000	4,193,000	—402,000	—9.6
Domestic Grain	138,000	475,000	—337,000	—70.9
Canadian Grain	3,653,000	3,718,000	—65,000	—1.7

Commerce at Port Newark.

Port Newark is an important sub-port of the Port of New York and leads all other sections in the handling of lumber. Receipts by water at Port Newark during the month of May were 16,613,000 board feet of lumber, and 4,788 tons of general merchandise, all of which was carried on 29 steamers, lighters and barges.

Steamship Passengers Travel via Port of New York.

During the month of April, 48,897 passengers arrived at the Port of New York from foreign countries, while 29,362 departed abroad, making a total of 78,259 in both directions for the month. This total compares with 82,097 arrivals and departures in April, 1929, and represents a decrease of approximately 5 per cent.

However, this traffic totalled 267,879 passengers for the first 4 months of the year, as against 250,177 for the same period in 1929, which is almost a 7 per cent. increase.

Vessel Movements in Foreign Trade.

The number of entrances and clearances of vessels in foreign trade at the Port of New York were less during May, 1930, than during the same month last year, but, as was the case in the previous month, the net tonnage was greater.

	May 1930 Number of Vessels.	May 1930 Vessel Tonnage.	May 1929 Number of Vessels.	May 1929 Vessel Tonnage.
Entrances ...	592	2,697,642	617	2,662,862
Clearances ...	643	2,955,825	655	2,831,267

Large Number of Freight Ships Arrive at Port of New York.

During the month of May, 1930, ships in the foreign and coastwise trades, to the number of 1,000, entered the Port of New York. The largest and best known were express liners carrying mails, passengers, and high grade freight, but their numbers were in the minority compared with the strictly freight ships, as the following classification shows:—

	Number.	Percentage
Passenger Mail Freight ...	180	18.0
Passenger Freight	94	9.4
Freight	497	49.7
Tankers	176	17.6
Colliers	53	5.3
Total ...	1,000	100.0

Over 100 of the freight ships carried full cargoes of bananas, sugar, lumber, gypsum, ore, newsprint, linseed, molasses, coffee and nitrate of soda for manufacture and distribution through the Port of New York.

Bombay Port Trust.

At a meeting of the Trustees of the Port of Bombay held on 17th June, 1930, the following were the main items dealt with:—

An application from Mr. E. C. Reid for six months' leave of absence from the meetings of the Board from 24th May, 1930, was sanctioned, and the election by the Chamber of Commerce of Mr. G. J. Griffiths as a Trustee *vice* Mr. Reid was recorded.

A 10-year renewal of lease of Rent Roll No. 129 (area approximately 424 sq. yds) between Broach and Itola Streets, Elphinstone Estate, was granted at a revised rental.

Estimates of expenditure for the following works were sanctioned against the relative Budget provision:—

(1) Rs. 94,700 for overhauling the entrance gates, Prince's Dock, which have been in position for 24 years. The Merewether Dry Dock caisson will be substituted while the gates are under repair. The work will be carried out at the Port Trust Workshops immediately after the monsoon.

(2) Rs. 65,800 for extending the bunkering pipe lines in Alexandra Dock to serve berths Nos. 1, 7, 8, 9, 16 and 17 and connecting Nos. 17 and 18 berths. This will complete the provision of oil bunkering facilities in Alexandra Dock.